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THE WESTERN JOURNAL

OF

AGRICULTURE, MANUFACTURES, MECHANIC ARTS,
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AND

GENERAL LITERATURE.

Agriculture and the Mechanic Arts are the basis of Civilization.

M. TARVER & T. F. RISK,
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WESTERN JOURNAL.

M. TARVER and T. F. RISK, Editors and Proprietors.

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THE

WESTERN JOURNAL.

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ART. I.—INCREASE OF GOLD—CAUSES MODIFYING ITS EFFECTS.

In pursuing our editorial labors, we have found nothing more difficult than the selection of subjects suitable for publication. Aware that success in this department of literature, and the benefits which we desire to impart to our patrons, depend chiefly upon the selection of appropriate matter, we sometimes experience a degree of solicitude upon this point, that is truly embarrassing. To enable a periodical writer to interest and benefit his readers, he must not only select subjects relating to their condition, but also discuss them at proper seasons; for, if the subject has grown stale, or, is not yet ripe for discussion, no ordinary talent can make it interesting to the reader.

He should not, however, in all cases, wait until the public mind is thoroughly imbued with a subject, before he ventures to discuss it; for, if he possess more than ordinary means of collecting facts, he may, by reasoning upon the effects which they are calculated to produce, anticipate public opinion, and make himself useful by giving it the proper direction. But, in this, it is necessary to exercise much caution. For who can anticipate events, or prescribe a policy consistent with their consequences, in an age when they cast no shadows before them; and, come with such frequency that before we can form an opinion in regard to the effects of one, our attention is arrested by another, calculated, perhaps, to modify the consequences of its antecedent?

This remarkable feature of the times has produced a restless and feverish condition of the community, embracing all classes, and extending throughout our common country; but in no part has its influence been felt so much, perhaps, as in the West. Although, this may be a state of mind necessary, perhaps, to prepare a people for the achievement of great objects, yet, if not directed by wisdom, it is calculated to lead individuals and communities into enterprises disastrous to their prosperity and happiness. This excited condition, occasioned chiefly by the recent discoveries of gold in California, has already produced the most extraordinary movement that has occurred since the days of the crusades. And when we consider the condition

of California—its destitution of the means of subsistence—the vast distance to be traveled--the difficulties to be encountered in reaching it, and the numbers that have voluntarily abandoned their social enjoyments for the prospect of obtaining gold by extraordinary labor—in circumstances of extreme privations—we feel that no other age or country ever produced a race, in all respects, so capable of great achievements as are our own people.

That this extraordinary movement will continue until the Placers are exhausted, or, so long as labor is worth its present price in California, there can be little doubt; notwithstanding thousands may return with broken constitutions and destitute of money. For, the certain hardships, the prospect of disease, and the increased hazards of life, weigh little against the hope that springs from the confidence that most men have in their own good fortunes. Besides, they know that these are evils that may be guarded against by foresight and discretion; and this knowledge inspires even timid minds with courage to embark in the most hazardous enterprises. Hence, it would be folly to undertake to dissuade men from emigrating to the gold region: the mania can only be cured by time and experience. In the mean while, however, we should look to the effects which are likely to be produced at home by the loss of so large an amount of labor; and by the addition of so mnch gold as we have reason to look for from the Placers of California.

We discussed one branch of this subject in a previous volume; but as the number of our readers has greatly increased, and many new facts have been developed since that article was written, we are induced by the importance of the subject to bring it again before the public; although, we may possibly reiterate some of the views heretofore expressed. It is scarcely to be expected that the excited condition of the public mind, to which we have referred, can be allayed by emigration alone; for comparatively, but a small portion of the community can go to California; and those who remain at home will be exposed to the danger of embarking upon enterprises not less hazardous, in some respects, than a trip to the gold region.

Thus far, however, men appear to have been cautious in entering into schemes of speculation: but, this caution may be regarded as the temporary pause that usually precedes a desperate action—the brief period in which the ruling, and, it may be, the evil spirit surveys the field of action and marshals its forces for the conflict—the calm that precedes the storm—the repose of the waters on the brink of the cataract. The minds of men are exercised in calculating the effects that are likely to be produced in the price of property and labor by an increased quantity of gold; and, according to our judgment, so far as their estimates have come to our knowledge, they are decidedly too high: and as correct views upon this point are important, we shall endeavor to state what we regard as the true principles upon which these calculations should be based. The quantity of the precious metals, which enters into the commerce of the world, is supposed to be about $4,000,000,000. Now the addition of $100,000,000 would increase the sum but two and a half per cent.; an amount not more than sufficient to represent the increase of property and supply the demand for other purposes than money.

It is true, nevertheless, that so long as the production of gold continues in California, the United States will contain more than its fair proportion, in comparison of distant nations; but this excess would be absorbed, in a great measure, by our increased commerce; and, should the annual product not exceed $50,000,000, a sum that in all probability will never be realised, it would, or ought to produce no effect beyond that of imparting a healthy tone to commercial operations and stimulating works of eternal improvement.

But, whatever may be the amount of gold produced, it is our policy to guard against speculations; we should aim to prevent an exorbitant advance in the *price* of property, by increasing the *quantity*. Every canal, or railroad that shall be constructed; every manufactory that shall be erected, and every ship or steamboat that shall be put in motion will require an additional amount of money to represent their value, as well as to keep them in operation.

There are many circumstances connected with the existence of gold in Caltfornia which seems to have been designed by Providence to avert the evil consequences that have generally, and, perhaps, in all cases attended the discoveries and production of large quantities of the precious metals in other countries.

The discovery and application of steam as a motive power, and the invention and improvement of labor-saving machinery have created a demand for money that never before existed, to the same extent. An increase of money is needed to represent the increased powers of producing; and these powers are capable of expanding, and will expand, as we believe, in a ratio corresponding with an increase of the precious metals. The facilities afforded to commerce, both foreign and domestic, and more especially to the latter, by the agency of steam, also requires an increase of money to represent the transportation of persons and property, and effect the exchanges of the latter. These facilities are likewise capable of being extended almost indefinitely; for who can assign a limit to the internal commerce of the United States? It may be safely affirmed that, in less than fifty years from the present time, it will be equal in amount to the commerce of the whole world, as it existed at the beginning of the present century. The recent acquisition and settlement of an extensive territory on the western slope of this continent, not only opens to, but forces upon us the commerce of China, Asia generally, Japan, Australia and the rich islands of the tropics. The commerce with these countries, before the end of many years, will be equal in amount to our commercial operations with all Europe, and will probably require a much larger amount of the precious metals to carry it on.

The admission of the people of all countries, to the privilege of working the mines, is also an important fact, bearing more immediately and with more effect, upon the subject than those we have mentioned; for, by acquiescing in this policy, the burthen of laboring in the mines is divided between ourselves and other nations; thereby leaving a larger number of our own people to pursue their usual occupations, and preventing an advance in the price of labor at home. It is also the means of distributing a large portion of the gold directly among other nations; which is calculated to relieve us from the evil effects that would be produced by distributing the whole amount in our own community, directly from the mines.

The large emigration from Europe, to the States east of the Rocky Mountains, is also a fact worthy of notice in connection with this subject; for by supplying the place of the emigrants from this country to California with a foreign population, an extravagant advance in the price of labor will be prevented.

The geographical position of the mines, and the difficulty of reaching them, is another important fact; for were they accessible to all who should desire to go there, it would in all probability endanger the prosperity of every other branch of business, and bring upon the country a train of evils, which no amount of gold could ever repair. And furthermore, their location is at a point where their products can be brought to bear directly upon the commerce of Asia; and will, therefore, be the means of opening an active intercourse with that country, in a shorter time, and upon a more extensive scale than if located east of the Rocky Mountains.

One who comprehends these facts, and recognizes their relation to the production of gold in California, will be relieved from the apprehension that it will accumulate to an extent that will greatly depreciate its present value—though the most sanguine estimates in regard to quantity should be realised. The amount required to enlarge the powers of production, and, increase the facilities of intercourse, transportation and exchange, may be regarded as illimitable: and so long as it shall be applied to these objects, it will prove to be a blessing, not only to the people of this country but to the world at large. It is only by a wise appropriation of the precious metals to these objects that they are calcu ated to relieve the human family from a portion of its burthens, and increase the means of subsistence and comfort.

We have been slow in giving credit to the accounts respecting the quantity of gold in California: we could not appreciate the fact that it existed in large quantities in a country that had been so long known, and possessed by a race who, of all others, were most addicted to mining for the precious metals, and who had, as we believed, examined every mountain and valley on the western slope of the Continent, south of the Columbia river, in search of them. And notwithstanding time has confirmed and established the early reports in respect to the Placers, yet, we have little confidence in their remaining productive for many years. If, however, the veins of gold bearing quartz should prove as extensive and rich as they are represented to be, they will constitute a new feature in the mining operations of California; and may be regarded as a permanent source of supply. We look to the developement of these veins, if, indeed, they are as rich as represented, as among the most important events of the age; for, if we credit what has been affirmed by individuals whose opinions are entitled to respect, it will be a small matter to extract one hundred million dollars from them annually, perhaps for generations to come. So large a supply, if permanent, would necessarily produce important results: but it will be in time to discuss these when the facts are established: the object of this article is to show, that upon the present state of facts there is no cause for excitement; nor, for an advance in the price of property, excepting, perhaps, a few particular articles required for outfits, and the California trade. Indeed, we are of opinion that if the account could be correctly stated, it would be

found that the gold produced in California would fall far short of the cost of outfit, expenses of traveling, and value of time consumed. Emigration will not continue many years upon these terms; and when it ceases, we shall expect to see the people of the Western States more contented with their condition: they will have become satisfied, we think, of the folly of looking for a better country than the valley of the Mississippi; and, being cured of their passion for moving West, they will go to work in earnest to develop their own great resources, by opening mines of the more useful metals; by constructing railroads and other works of internal improvement; building up manufactories; and, improving their moral and social condition, by the encouragement of public and private schools. Here is a field sufficiently large and diversified to afford employment for all our people for many generations: one in which they may labor in comfort, without encountering the sufferings and privations incident to a trip to California, and laboring in the gold mines. And, furthermore, if the mines should continue productive, this will be the surest of all methods of obtaining a fair dividend of their products: for it matters not who digs or washes the gold from the earth, or what direction it takes from the mines, or whose image is stamped upon it, it will seek out and find the producer of corn, of wine, and of oil; the manufacturer of wool, of cotton, and of flax; nor, will the producer of the more useful metals, the artizan and he who labors for the instruction and refinement of others, fail to receive their just dividends. There are few men that do not understand this principle of political economy: yet, impatient of delay, and desirous of obtaining more gold than their neighbors, many abandon the most certain for the most precarious means of acquiring it. We have examined the accounts from California attentively, and we have arrived at the conclusion, that not more than one in five will return, at the end of two years, with more gold than will pay the cost of his outfit and the wages that he might have earned by his labor at home. And, besides this, the fact has been ascertained by the life insurance companies, as we have seen it stated, that the risk of life is increased about fifteen per cent. by the trip, and labor in the mines. Such hazards might be incurred by men with no family or profitable employment, without subjecting themselves, perhaps, to the imputation of folly: but in our judgment, a farmer, with a family in the Western States, who, advised of the chances against him, deliberately resolves upon a trip to the gold mines, is guilty of something more than folly; for it may be gravely questioned whether as a husband or parent, he has the moral right to sever these relations for the time, and jeopardise his labor and life in so hazardous an enterprise.

ART. II.—LEWIS AND CLARKE'S EXPEDITION TO AND FROM THE PACIFIC.

(*Continued from Vol. III., page* 379.)

After visiting Cape Disappointment and pursuing the coast to Puget's Sound, and making other excursions, they built houses and fixed their winter quarters at the head of a basin on the south side of the stream, to which they gave the name of Merriwether's Bay. Here they subsisted upon dried fish, and by hunting.* They occupied themselves in visiting the adjacent country and the Indian tribes, collecting from the latter a number of interesting facts touching their origin, affinities, religion, morals and social condition. The principal of these tribes were the Echaloots, the Chillnekittipaws, the Skillocts, the Wakiakums, the Chitts, the Skillamucks, the Lucktons, the Cathlamahs, the Clatsops, the Chinnooks, the Chilluckittequaws, the Quathlapotles, the Chawahnaiooks, the Clanaminanums, the Claxters, the Cathlacumups, the Clahnaquahs, the Necachobers, the Neerchokoos, the Cushooks, the Shahalas, the Nechecolus, the Cathlanaquiahs, the Cathlacomatups, the Shotos, the Caihlahaws, the Clackamos, the Chakowahs, the Calapoewahs, and the Muttnomohs, the last of whom were most numerous, and all of whom belong to the same philological family.

On the twenty-third of March, 1806, the ascent of the river in in canoes was commenced upon their return trip. The annual freshet had already commenced. Great numbers of Garter snakes were observed along the river, sometimes twisted into bunches of fifty or sixty. At the *Great Dalles*, they succeeded in procuring some horses and continued their ascent of the river on the north bank, through rough and irregular ridges and isolated cliffs, and broad bottoms of a sterile character, where great numbers of rattlesnakes were seen, until the 28th of April, when they crossed to the south bank, at the mouth of the Walla-walla river. Here they met the Walla-wallas, a powerful tribe, and like all the tribes on the Upper Columbia, rich in horses. It is not an uncommon thing for a single chief to own a thousand head.

From the *Great Falls* to the point where they crossed the river, the country presented an aspect of almost entire desolation. Broad plains, from the barren surfaces of which the meridian heat of the sun is reflected, and rugged, towering, bleak and ferriginous cliffs and ridges alternately attract the eye. South of the river, this space is occupied by a line of mountain barriers, intersected with narrow rich vallies where bands of wild horses congregate. But on the north, no animal above

*The rainy season, which commences in November and lasts five or six months, set in some days after their arrival at the mouth of the river, and this with the constant exposure, brought on serious bowel complaint, and other disorders; but happily, no deaths occurred. Above the cascade mountain ranges there is no rainy season.

the rank of the *reptilin* is ever seen; and the stiff, stunted and scattered plants seem to struggle for a precarious existence.

The soil of the valley of the Walla-walla is a deep vegetable mould of wonderful fertility, admirably watered and timbered. A vast plain expands southward as far as the eye can reach;—to the southwest the snow-clad peaks of mounts Hood, Jefferson and St. Helens, rise majestically upward to the skies;—to the east the apparently interminable range of the Blue Mountains, with their blue-tinged summits melting into the pure azure of Heaven;—and on the west, a group of lakes which expand in shining sheets of silver—all unite to present a scene of grandeur and beauty rivalling in richness and magnificence the most glowing picture of oriental story. Passing the Blue Mountains to the east, they pursued their journey to the Kooskoosie, at the mouth of which they arrived on the 4th of May. Here they met their old acquaintances, the Chopunnish. *Twisted Hair*, the grand chief, received them with great cordiality. The horses and baggage left in his care, were faithfully delivered up, and the party made an ineffectual attempt to proceed, but were driven back by the inclemency of the weather and the deep snows. They remained until the 24th of June, when, having obtained good Indian guides, the journey was renewed. Ascending an eminence in front, an oval valley spread out with ranges of hills surrounding it, on their sides, densely covered with pines and firs, with deep gorges, jutting peaks, and winding hollows, amid which every possible hue of light and shade continually shifted, exhibiting, as they moved, a rapid series of panoramic views. Turning up Hungry Creek, to its source, they ascended the elevated ridge between the chopunnish and Kooskosie, clambering over rugged timber, confused piles of rugged rocks, across deep gullies, and around overhanging cliffs, through deep snow and rushing torrents, to its summit, where winter yet reigned undisturbed. As they advanced upon the apex of this ridge, they were often compelled to pursue narrow paths along the outer edge of precipices, where a single false step would have precipitated them thousands of feet; and to cross broad sheets of ice, where the slightest accident would have launched them into dark and fathomless gorges. Passing from this frozen ridge across the sources of the Chopunnish, they ascended the fearful peaks interposed between the tributaries of the Clarke and Kooskoosie, and labored on, day after day, over rugged ridges, and precipitous cliffs, down deep ravines choked with rocks, and trees and shrubs, and across the upper sources of the Kooskoosie, until rising, the magnificent range which stretches north and south, for many miles, between the waters of the Clarke and Lewis, they descended into the rich valley of Traveler's Rest Creek, which they had ascended the previous summer.

The territory embraced within the ranges of the Rocky Mountains, is by no means, as is generally supposed, sterile and unproductive. Within these mountains are enclosed broad and fertile vallies watered by limpid streams and decorated with glassy lakes, along their bases benches of twenty to fifty miles in width, the deposit for ages of abrasion and vegetable mould, are extended, and within their bowels, iron, coal, copper, sulphur, and salt in its fluid and solid state have been discovered. Mineral waters of many varieties, the medicine of

nature, gush from the hill sides, surrounded by scenery, magnificent beyond the conception of the imagination. The pilgrim passes alternately through long, fertile and undulatory vallies, carpeted with a variety of rich grasses, where the currant, the servis-berry, the gooseberry, the camash plant, the cherry and the strawberry spring up spontaneously to furnish sustenance to the indolent savage; and where rich, brilliant and fragrant flowers ravish the eye and delight the sense; and along the base line of vast mountain chains clothed far up their brown sides with rich verdure, with jutting peaks and cliffs of stained and weather beaten rock with flashing coronets of snow, whilst far above, lines of naked pinnacles, pierce the purple canopy. Broad lakes, in whole glassy bosoms, the adjacent scenery is depicted by the Master's hand, expand here and there, with myriads of wild fowl floating upon their pellucid waters, and innumerable fishes of delicious flavor glancing and gamboling in their placid bosoms. So abundant are the salmon in these upper streams that many thousands of them perish annually at the end of their pilgrimage, and the grizly and black bear, the wolf, the eagle and the vulture, assemble and banquet in peace upon their dead bodies.

The period is rapidly approaching, when these extensive savannahs of hay shall cease to be consumed by the fire of the inconsiderate savage, or submerged in the snow of winter, when these superb forests, now the haunts of the lynx and panther, shall ring with the sound of the pioneer's axe, when these exhaustless quarries and deep mines shall yield the hoarded treasure of ages, to the skill and intelligence of civilization. An active, intellectual and enterprising people are destined in the order of Divine Providence, to take possession of this spacious region, the ferocious beast of prey will yield his fair domain to herds of domestic and peaceful animals, the jocund song of the herdsman will be heard where now the yell of the savage startles the ear, and the sciences and the arts will penetrate this wilderness, enlarging the dominion of man over Nature, and beautifying these vallies with the creations of Genius and Taste.

At the mouth of Traveller's Rest creek, Captains Lewis and Clarke divided the party, and separated with an agreement to re-unite east of the mountains at the mouth of the Yellow Stone river. Captain Lewis advanced a few miles in a northern direction along the west bank of Clarke's river, then crossing the stream on rafts he struck into an Indian trail in an eastern direction. The valley of the north branch of Clarke's river is an extensive undulatory plain of exceeding fertility dotted over with comical mounds from twenty to fifty feet in height and of a circular form. Reaching the Cokalahishkit, a tributary of the east branch, the party entered the mountains through a narrow, but level defile, flanked with bold and elevated peaks. The grand, the sublime, and the beautiful, here concur to exhibit the strangest and most fantastic scenes. Interminable layers of ferriginous, granite and gneiss, are cut into heavy blocks by the once fused masses of trap, poryhyry, and serpentine. At intervals in the interstices a little soil is collected, out of which the immortal pine springs up and asserts his title to the monarchy of the forest. If the winding paths of the animals and the savage be followed through these irregular masses, the most ravishing and picturesque scenes

constantly open to the view. Surrounded and circumvallated by colossal structures of primitive rock, varied and beautiful scenery is spread before the eye, sombre gorges, loaded with rank shrubbery, undulating plains, covered with verdure, majestic and gloomy forests, livid gashes and fissures, bleak, sterile, volcanic ravines, and swelling mountains, around whose brows the morning mist reflects the beams of the Day-God in a thousand changing and brilliant hues.

Ascending a regular and gentle eminence the party on the 7th of July arrived through a broad gap of the mountains at the summit of the dividing ridge between the eastern and western waters. And this is the *North Pass*, a natural road from the Missouri to the Columbia which needs not the aid of man to improve it. Winding through hills, hollows, and gorges, they continued to descend eastward. Images of sublimity and terror surrounded them on all sides. Projecting peaks rose like towers, and dipped their points in the etherial azure of the skies, awful precipices hung in trembling fragments over their heads, the stunning sounds of wind and water gave assurance of the tempest's strength; and at every turn they beheld the irresistible evidences of omnipotent power and goodness.

Following the course of the Medicine Bow river for some distance. Captain Lewis took a direct course to Bear island below the falls where the *Cache* had been made the preceding spring. Whilst here one of his men named McNeal had a strange encounter with a grizly bear. Being out upon a hunt he approached a thicket of brush, his horse started and wheeled suddenly, throwing him nearly under the bear. He started up, and seeing the bear raising himself on his hind feet, he struck him on the head with the breech of his gun. The blow broke the gun, but knocked the bear down, and before he recovered McNeal sprang into a willow tree. Bruin took up his position at the root of the tree for several hours, but his patience finally failed him, and he raised the siege. McNeal descended, found his horse and hurried into camp, with his curiosity fully satisfied.

Captain Lewis returned to Medicine Bow river, and descending it some distance, crossed over to the *Great Falls*, passing large herds of baffalo. Moving northwest across Tanzey river through a high naked plain, one days travel brought him to Maria's river where he encamped. Ascending this stream some distance and satisfying himself where it had its source, he commenced retracing his steps. In a few days he came upon a camp of upwards of thirty Blackfoot Indians. Finding it impossible to avoid them, Captain Lewis boldly entered their camp with his companion. He was treated politely and at night proposed that the two parties should encamp together, to which the Indians assented. "The Indians," says the Journal, "got up at sunrise and crowded around the fire near which J. Fields, who was then on watch, had carefully left his rifle by the head of his brother who was still asleep. One of the Indians slipped behind him, and unperceived, took his brother's and his own rifle; while at the same time two others seized those of Drewyer and Captain Lewis. As soon as Fields turned round he saw the Indian, running off with the rifles, and instantly calling his brother, they pursued him for fifty or sixty yards, and just as they overtook him, in the scuffle, R. Fields stabbed him through the heart with his knife: he ran about

fifteen steps and fell dead. They now hastened back with their rifles to the camp. The moment the fellow touched his gun, Drewyer who was awake, jumped up and twisted it from him. The noise awoke Captain Lewis who instantly started from the ground, and reached to seize his gun, but finding it gone he drew a pistol from his belt, and turning about saw an Indian running off with it. He followed him and ordered him to lay it down, which he was doing just as the two Fields came up, and were taking aim to shoot him; when Captain Lewis ordered them not to fire as the Indian did not appear to intend any mischief. He dropped the gun, and was going off slowly, when Drewyer came out and asked permission to kill him, but this Lewis forbade. But finding that the Indians were now endeavoring to drive off all our horses, he ordered the men to follow the main party who were chaising the horses up the river, and to fire instantly upon the thieves, while he without taking time to run for his shot pouch, pursued the fellow who had stolen his gun, and another Indian who were driving away the horses on the left of the camp. He pressed them so closely that they left twelve of their own horses, but continued to drive off one of ours. At the distance of three hundred paces they entered a steep niche in the river bluffs, when Captain Lewis being too much out of breath to pursue them any farther, called out that unless they gave up the horse he would shoot them. As he raised his gun one of them jumped behind a rock, and spoke to the other, who, stopping at the distance of thirty paces, the Captain shot him in the belly. He fell on his knees and right elbow, but raising himself a little, fired, and then crawled behind a rock. The shot had nearly proved fatal, for Captain Lewis, being bare headed, felt the wind of the ball very distinctly. Not having his shot pouch, he could not reload his rifle; and having only a single charge for his pistol he thought it most prudent to desist. Retiring slowly to the camp he was met by Drewyer, who, hearing the report of the guns, had come to his assistance, leaving the Fields to follow the other Indians. Captain Lewis ordered him to call to them to desist from the pursuit as we could take the horses of the Indians in place of our own, but they were too far off too hear him." Soon after the Fields returned. Captain Lewis was rather the gainer upon the whole, having taken four horses, and lost only one. This unfortunate rencounter excited the implacable hatred of this whole tribe, and as we shall see, generated much strife and loss of life in the future.

It now became necessary to move with great rapidity; for there could be no doubt that an overwhelming force of the Blackfeet would attempt to intercept them at the mouth of Maria's river. The Indian horses proved good, and in some days and nights of speedy traveling, they reached the Missouri, below the *Great Falls*, and there fortunately united with sergeant Ordway's party, who had been despatched by Captain Clarke down the Jefferson, with the canoes *cached* on that stream the preceding summer. The united parties instantly descended the river in the canoes, to the mouth of the Yellow Stone, as agreed upon; but Capt. Clarke, with his party, had there left a note and floated down some days farther travel. Before Capt. Lewis reached the camp of Capt. Clarke, he was seriously wounded in the thigh by one of the hunters whose eyes were not good, and who mis-

took him for a deer. On the 12th of August they landed at Clarke's camp, and the way-worn travelers surrounded the camp-fires and told the story of their adventures. Turn we now to the history of Capt. Clarke's journey.

On taking leave of Capt. Lewis, Capt. Clarke ascended the west bank of Clarke's river, through a long and beautiful valley, diversified by gentle eminences, undulatory plains and broad vistas, intersected by sparkling streams, and shut in by mountain barriers, wearing upon their brows a glittering coronet of snow. Crossing the stream they passed over to the east branch, which they pursued to the vicinity of its sources, and then diverged to the dividing chain between the waters of the Clarke and the Missouri, surrounded as far as the eye could penetrate by endless ranges of mountains piled in enormous masses, until their remotest pinnacles melted into the skies. Descending the eastern slope of this ridge, they struck a branch of Wisdom river, and followed it to the Jefferson, cutting their way through thickets and vines and matted shrubbery. Raising the hidden canoes, they descended the Jefferson some distance in them, and leaving Sergeant Ordway with some men to go on with the canoes, Capt. Clarke turned southward through a gap in the mountains, towards the Gallatin. Here a sudden hurricane arose, and the party were compelled to huddle and cling together to resist the fury of the storm. It was, indeed, as if the Master had raised his hands from the reins and left the wild elements to work their will for a time. As the tempest passed on, the roaring of distant winds—the moaning and creaking of swaying trees—the murmuring of rolling streams—the wild dashing of snow-white cascades—the heavy booming of something resembling distant ordnance, and the furious tumbling of detached rocks, madly leaping from the mountain's brow—impressed the mind with deep solemnity and awe. But the wild winds have swept away the last vestige of the dark pall of clouds, and a sound is heard which awakens delightful associations. It is the lowing of the stag and the buffalo to their companions. The long herds move out from beneath the shelving rocks. The moose deer, whose nice ear distinguishes the minutest variations of sound, gives warning of approaching danger—he has snuffed the tainted breeze—he has recognised the hunter foe—and, in an instant, he wildly leaps from ridge to ridge. Bands of mountain sheep are seen bounding over the sunny slopes—the solitary goat is poised upon the precipice, gazing at the scene beneath, and wondering at the sudden confusion—the delicious songs of a thousand birds enliven every thicket—and hark! the wild scream of the eagle as he launches from his eyrie in the clouds, strikes a sudden panic into the sweet choristers, and they are suddenly hushed until the sweeping sounds of the enemy's pinions have passed away, and they again renew their melody.

From the valley of the Gallatin, Capt. Clarke pursued his course, winding through fertile vallies, passing over upland slopes, and around projecting spurs, until passing through another gap he issued into the valley of the Yellow Stone. The whole route is represented as sufficiently good to be passed with wagons, by a little improvement; and, it passes through numerous coves and vales eminently fertile and beautiful, and abounding in game and presenting scenes of amenity and

loveliness which admirably contrast with the rugged, precipitous, and snowy heights by which they are circumvallated. Descending the Yellow Stone for some days' journey, canoes were constructed in which the party floated downward to its confluence with the Missouri. The valley of this stream was found to be spacious, fertile, and salubrious—the streams are fringed with trees, from whence the valley expands many miles to the mountains. The traveler can almost imagine himself upon the Danube, for the valley is sprinkled over at long intervals with cyclopean structures of granite, closely assimilated in appearance to the stern and solitary castles with which Europe was covered and guarded during the middle ages. But these structures exceed those of Europe in magnitude and grandeur, and the woods and waters are disposed with a taste and beauty which the highest art must ever toil after in vain. A rich girdle of heights and mountains encircle this charming valley, the bases and dark sides of which are shrouded in shrubs, and the summits tufted with noble forest trees.

The party were so much annoyed by musquitos at the mouth of this river, where they had appointed to await Capt. Lewis, that leaving a note for him, they ascended some days to a more favorable camping ground, and here, as we have seen, the true-hearted friends were once more united.

On the 13th of August the whole party commenced the descent of the river, accompanied by "Big White," a Mandan chief, who had agreed to go with them to see his great father, the President. In a few days one of the men, named Cotter, solicited permission to join some trappers, with whom they had met a week previous. As he had been a faithful hand, his suit was favorably answered. This is an instance out of thousands, illustrative of the facility with which civilized men slide into the habits of savage life, and contract a passionate love for a course of life, which of all others, would seem to offer the fewest inducements to a rational being. We shall have occasion to recur to the trials and sufferings of this man hereafter. Our party, on their return, found wars in existence between the Minnatarees and Shoshones—the former and the Arricarras—and a war threatened between the Mandans and Arricarras. The passion of these fractious bands for war is at all times easily kindled into a flame, and a twelvemonth without a war would be a period of as much stupidity with them as we imagine a like time without religious festivals would be with the Italians. Fort Mandan, which they had built on their outward trip, had been accidentally destroyed by fire. A day or two after, some traders were met with, ascending the river, by whom they were informed that seven hundred Sioux had passed the Arricarra villages on their way to attack the Mandans and Minnatarees, having their women and children encamped near the Big Bend. The Arricarras had determined, for a wonder, to remain neutral in this conflict. Reaching the Arricara villages, they saluted them with four guns, and were received with great honor by the Indians—the grand chief, "Grey Eyes," being at their head. A large party of Cheyewes were on a visit to these Indians, from the head of Platte. The party visited all the Arricarra villages, receiving hospitable treatment at each. Passing the Great Bend, the party moved quietly and leisurely down the stream, now landing to gather the rich harvest

of plums, buffalo berries, gooseberries, and other fruits and then to capture a buffalo cow, the richest and most delicious of meats, until the 30th of August, when they met a party of Tetons inclined to be hostile, but Capt. Clarke, crossed the river to a sand-bar, near the shore on which the Indians were assembled, and held a brief and decisive conference with them. The boldness of the Captain evidently astonished them very much---and, when on his return to the boats, the whole party steered across close to the shore on which they were assembled: the "party on the hill, seemed not a little agitated." One man came near the shore and invited them to land, which they promptly declined doing, upon which he returned to the hill, and struck the earth three times with his gun, a great oath among the Indians, who consider swearing by the earth as one of the most solemn forms of imprecation.

Below the Great Bend, the Yankton Sioux were again met with—a war party out in search of scalps and plunder. Our travelers, however, were kindly and cordially received by these people, and they were the last party of Indians encountered in their descent. Those below were, probably, out upon hunting or war excursions. On the 3d of September, to their great joy, they met a Mr. Airy, a trader, who had crossed the country from Prairie du Chien, and through whom they gathered much news of great interest. In a few days after, a Capt. McClelland (formerly of the army) passed them on his way to the Pawnee villages on a trading excursion. The fact should be noted, that the ultimate design of this trader was to pass over to the vicinity of Santa Fe and trade for gold dust. Whether his purpose was ever carried out we cannot say, but it is *the first* attempt of the kind of which we are informed. From him, our travelers learned that they had not been heard of in the United States, after they left Fort Mandan, in 1805, and that the Government and the people had long since given them up for lost.

Hasting on down the river, they met successively a number of trading parties, some of whom were destined to each of the tribes upon the Missouri, the Kansas, the Platte, and the Yellow Stone. Nearly all of these parties were ascending in pirogues and canoes loaded with goods, one of them however—a party of native Canadians, was in Batteaux constructed in true Canadian style. On the 20th of September the party had the gratification of landing and receiving the hospitalities of the people of the little village of La Charette, the last white friends with whom they had parted on their outward journey; and on the 23d they fired a salute and landed at the *village* of St. Louis, after an entire absence of two years, three months, and nine days, during which period they had passed over a distance of more than seven thousand five hundred miles, through wild and wholly unknown regions, inhabited by roving thousands of savages treacherous, cruel and vindictive, swarming with ferocious beasts, encountering an amount of danger, privation, anxiety, suffering, and vicissitude, which rarely has fallen to the lot of those who are the first to penetrate wilderness lands. We do not feel equal to the task of placing a proper estimate upon the labors of these enterprizing travelers; nor will our space allow us to make the attempt. The journal kept by Captain Lewis, was subsequently published under the supervision of

Paul Allen, Esq., of Philadelphia in two volumes octavo. The style of this journal is plain, simple, and void of all attempt at embellishment; but in it as large an amount of really valuable matter respecting the geology, botany, geography and zoology of the great west and the numerous Indian tribes from the Mississippi to the Pacific may become, conveyed in, clear, perspicuous, and unpretending style, as can be found comprised in the same space in any other work of like character.

ART. III.—MELSEN'S NEW METHOD OF EXTRACTING SUGAR FROM CANE AND BEETS.

The recent discoveries of M. Melson of Belgium, relating to the manufacture of sugar from sugar-cane and beets, may, in some respects, be regarded as among the most important events of the present century. Assuming that he has accomplished all that he claims, the inquiry naturally arises, what degree of merit shall be awarded to him whose scientific labors have doubled the products of all the capital and labor employed in producing the sugar bearing plants throughout the earth? We are not clearly informed whether the cost of manufacturing is increased or diminished by this new method of extracting the juice from the plant; but we are led to infer that something is gained in this respect also.

Should this newly discovered method of extracting sugar from beets be rendered sufficiently simple to enable every farmer to make sugar for his own consumption, or for market, without the use of expensive machinery, it will open to the agriculturists of the north western states a new branch of industry that will add greatly to the prosperity of the country. We have long looked to the region of the upper Mississippi as destined to become a sugar growing district; and, we conclude that these discoveries are calculated to hasten the introduction of the beet, as one of its agricultural staples. For the more the cost of production is reduced the larger will be the cost and charges of transportation from the south, in proportion to the value, and the greater the advantages in favor of the producer in the north. To what extent these discoveries may effect the value of sugar estates in the cane growing region is difficult to foresee; but if, as we incline to believe, the consumption should increase in a ratio equal to the production, and, consequent decline in price, sugar growing in the south may continue as profitable as heretofore.

The chemical agents used by Professor Melsen have been known for some time, to the learned chemists of Europe, and we are not aware that any have doubted the success of his discoveries; and hence we regard it as an established fact that all the saccharine matter contained in cane or beets is susceptible of being converted into sugar: and, consequently, all that is now wanting to crown his discoveries with complete success is a practical application of the chemical agents to the details of manufacturing. Editors.

MELSEN'S SUGAR MANUFACTURE.

NEW METHOD FOR THE EXTRACTION OF SUGAR FROM SUGAR-CANE AND BEETS, BY M. MELSEN, PROFESSOR OF THE STATE VETERINARY AND AGRICULTURAL COLLEGE OF BELGIUM, CORRESPONDING MEMBER OF THE ROYAL ACADEMY OF BELGIUM—OF THE SOCIETY-PHILOMATHIC, &C. TRANSLATED FROM THE FRENCH BY THOMAS G. CLEMSON.

The extraordinary circumstances in which I am placed make it my duty to extract from a larger work on which I am engaged the observations most proper to give an exact idea of the researches to which I have devoted myself. Whatever may be the success of my method for the treatment of saccharine substances, I am confident that all my observations will be found exact, and their knowledge may give rise to useful reflections on the part of those occupied in manufacturing sugar, and without doubt to new practical applications in its different branches.

It is a well known fact that, in healthy sugar-cane and healthy beets, all the saccharine matter may be crystalized. It is also known, that this matter may be easily extracted by means of weak alcohol, which may be afterward driven off by evaporation, and leave the sugar in pure and colorless crystals.

In bitter almonds there also exists a substance which may be crystalized by the same means, without losing its purity. But the effect is entirely different when water is used in place of alcohol. This substance found in bitter almonds (amygdaline) disappears or undergoes a metamorphosis, and, by the change, various new substances are formed entirely different from the original. That water should have this effect, it is necessary that it come in contact with the air and that it should encounter and dissolve certain fermenting substances which are found in the tissue of the bitter almonds with the amygdaline.

In the sugar-cane and the beets there exist also these fermenting matters, capable of transforming sugar into other substances. In order to produce their action it is necessary that they should be placed in contact with the saccharine matter by means of water, and should themselves be exposed to the air.

Every one knows with what rapidity the juice of sugar-cane changes character in the warm climates where it is made; and, although this alteration is less rapid in the juice of beets, it is sufficient to create difficulty, and every means has been tried to make the manufacture as rapid as possible in order to avoid this cause of trouble and loss.

For the chemist who makes any analysis, the problem of the extraction of sugar is solved by the use of alcohol. He, by this agent separates the saccharine matter from the fermenting substances, and destroys the latter without injuring the former; thus preserving the sugar from any destructive influence. But for a large operation it is necessary that the agent should be cheap and easily managed. Alcohol is dear; its use requires the greatest precaution, and is very dangerous. Setting aside then alcohol, is it impossible for chemistry to produce a liquid which has the properties essential for this case, and which, like alcohol, will prevent all fermentation, even when exposed to the air? I think not. I do not even pretend to say that the sys-

tem which, after many trials, I have considered the best yet known, is either the only one or better than any other.

In the sugar-cane or beet there is a saccharine matter dissolved in water; nevertheless, this matter rests in that form a long time without change. If we could then make use of water as a dissolvent in the same manner that nature does, we should extract the sugar without destroying its quality. The difficulties exist neither in the water nor the sugar, but in the air and in the fermenting matter contained in the cells formed by the tissues, which the contact of water puts in action. This being the case, is it possible to crush the cane, or grate the beet, in a vacuum, and extract the juice and boil it without removing it from this vacuum? If it is possible to do this on a large scale, the porblem is solved. But this system seems impracticable, and I have not tried it.

It would appear easier to arrive at the desired result by operating with an inert gas, such as carbonic acid. To grate the beets in carbonic acid, to wash them in water charged with carbonic acid, and to water them upon the grater with water containing carbonate acid of lime, or carbonate acid of magnesia. My essays have not had the success I hoped. The least trace of air is sufficient, and these agents do not seem entirely to annul its effects. Their action is, therefore, uncertain.

I will mention here (only by way of observation) a class of bodies to which recourse is often had to prevent a fermentation. These are the metallic oxydes, capable of combining with the fermenting matters, or the substances from which they are produced, and forming insoluble compositions. The oxyde of mercury and the oxyde of lead are in this category. For an analysis in the laboratory, the sub-acetate of lead may be easily and certainly employed, for it precipitates the fermenting substances and every thing capable of producing them, and leaves the sugar dissolved. But the unhappy consequences of employing it are too easily to be seen, and have been but too certainly realised every time it has been used in the manufacture of sugar to permit me to believe in the possibility of using it.

The action of tannin and monohydrated phosphoric acid is different. These two agents coagulate the fermenting substances, precipitate the matters that form them, and purify without heat the juice of either sugar-cane or beets, in a manner that renders their application possible.

I thought that I should approach the discoveries I sought for in trying—

1. To prevent fermentation during the extraction of the juice, and to avoid the contact of the air while the juice was cold.

2. To profit by the coagulation of the fermenting substances, caused by heat, to carry them off, as is practiced in defecation.

For this purpose I sought a substance, having a great affinity for oxygen, without action on the saccharine matter, or danger to man, cheap, easy to produce any where, or to transport.

Three substances particularly fixed my attention: the binoxyd of azote, sulphurous acid, and aldehyde. This remarkable class of compositions, having a great affinity for oxygen, and which contain already two equivalents of this body, and absorb a third with facility to produce acids, appeared to me eminently proper to fulfill one of the con-

ditions mentioned, viz: to prevent by their presence the oxygen of the air from acting in producing fermentation.

I have no doubt but that some one more capable than myself will ultimately succeed in giving a practical form to the binoxyd of azote, for I cannot believe but that a substance which destroys instantly oxygen, and forms with it an acid proper to precipitate the fermenting matters, will be one day employed in the extraction of sugar. Dissolved in the sulphate of iron, it would guarantee the juice from all alteration until the end of the defecation by lime, and this accomplished, the juice would retain scarcely a trace of the re-agents employed.

Aldehyde, or the organic substances which resemble it, are too dear. I, therefore, made no stop at them.

During all the experiments which I slightly mention, I found myself always inclined to return to the use of sulphurous acid. Its efficacy, as an obstacle to fermentation is so well proved, its price is so low, its production so easy, and the substances necessary to produce it so universal. It is true that sulphurous acid, which was so successful in the hands of Proust when used to prevent fermentation in the saccharine matter of grapes, has always presented, when applied to the manufacture of beet sugar, insurmountable objections. I was not ignorant either that the most experienced persons had failed in the attempt to use it. Nothing practical had resulted from their efforts.

If sulphurous acid can be profitably used where the must of grapes is concerned; if, in preventing fermentation, it has no influence on sugar, it is because it possesses at once these two properties either of itself, or because it is converted into sulphuric acid by the action of the air. Every one knows, on the contrary, that the cane sugar is changed, and takes the nature of grape sugar when placed in contact with acids, particularly with sulphuric acid. Thus, however inoffensive the sulphuric acid is when applied to the must of grapes, it is impossible to use it for the juice of the sugar-cane or beet; for as soon as the air absorbed by the sulphurous acid changes it into sulphuric acid, the effect of this last on the juices mentioned changes them into grape sugar. Reflecting on this difficulty, I asked myself if sulphurous acid used with a powerful base, such as potash, soda or lime, would still present the same obstacle. I found in reality, that the base absorbing the sulphuric acid as soon as formed left the sugar intact. From this point I was led to make many experiments, easy to re-produce, useless to repeat in detail, and which I will sum up in a few words.

Dissolved sulphurous acid added to a solution of the juice of sugar-cane or beets, prevents fermentation, but destroys slowly the sugar, if left cold in contact with the air. If heated, the destruction is much more rapid.

The neutral sulphites of potash, of soda, and of lime, do not prevent fermentation, but do not injure the sugar, whether cold or warm. Neither of these products, then, would serve.

The acid sulphites, and more especially the sulphite of lime, presented, on the contrary, properties worthy of interest.

Sulphurous acid, in excess, prevents all fermentation. The cane which all these salts contain neutralizes the sulphuric acid as fast as

it is formed. It remains to be seen if, by themselves, or by their excess of sulphuric acid, they have or have not the power to convert cane sugar into grape sugar.

I have heated for several hours, small quantities of sugar-candy, dissolved in water, with a large quantity of bisulphite of lime. The sugar was changed. It became uncrystalised and deliquescent. The syrup thus formed, presented sometimes an appearance with which manufacturers of sugar are well acquainted. Submitted to the action of heat for evaporation, it remained motionless. There was, therefore, the proper quantity to find out, and much care to be taken; but as it takes a great deal of the bisulphite of lime to destroy the sugar, and a small quantity to destroy fermentation, I thought this agent worthy of a closer examination.

Sugar-candy in cold water, charged with bisulphite of lime, even in excess, crystalizes without loss and without change, by spontaneous evaporation, at a very low heat. It is, therefore, possible to manufacture sugar without artificial heat. Further on, the importance of this remark will be made manifest.

Perfectly white sugar-candy being dissolved in ten times its weight of water, I added half its weight of a solution of bisulphite of lime, making ten degrees of the areometer of Baume, and boiled it for about an hour. It was then filtered, to clear it of the neutral sulphite, which was deposited. It was afterward put into a plate, where it crystalised entirely without a trace of molasses, leaving precipitated, however, a small quantity of the tartrate of copper, which had been dissolved in the potash.

Straw-colored sugar-candy, treated in the same way, gives the same result, only that the crystals are lighter colored than the candy itself.

The same experiment with all kinds of sugar, produced the same results, whether the liquid, when evaporated, was left acid or had been carefully neutralised after boiling. I found also, that the crystalization was as perfect and rapid when the liquid was left unfilteredas when it was filtered before the evaporation.

I have examined with the polarizing apparatus, following the method of Mr. Clerget, the sugars that were produced by these different treatments, and I found—

1. That the crystalized mass gave a direct notation, almost identical with that given after the inversion. The differences, sometimes in one sense sometimes in another, and confounding themselves with the errors of observation, proved that the sugar was not transformed, or that this transformation was practically insignificant.

2. That portions of the liquids, taken at different stages, before the crystalization was complete, presented to the eye all the qualities of cane sugar, and deviated to the right of the plain of polarization, and gave a direct notation almost identical with that observed after the inversion.

It results from this, that, either after crystalization, or in the syrup before crystalization takes place, no difference is to be found between the sugar dissolved in pure water and that which has been submitted to the action of the bisulphite of lime, when the excess is not too great of the bisulphite, or the heat too long continued.

It was, then, reasonable to suppose that the bisulphite of lime, used as a substance having a great affinity for oxygen, and as an antiseptic, would have no injurious effect on the sugar, if it was poured cold upon the beet grater, or the sugar-cane mill, in such a manner as to mix with the juice the instant the cells which contain it were broken. It was also to be supposed, that it would endure the heat necessary for clarifying without injury. In this operation, judging from experience, the lime employed would neutralize the bisulphate, leaving the juice purified from the fermenting matters, and prepared for evaporation, without loss of sugar. But I soon found that the bisulphite of lime possessed certain qualities which demanded further attention.

White of egg, blood, the yolk of the egg in emulsion, milk mixed with water, when mingled with the bisulphite of lime, and entirely coagulated at a temperature of 100 deg.(centigrade); these liquids, filtered and subjected to evaporation, leave residuums, in which are found a small quantity of azotized matters, mixed with sugar of milk, or the salts of these substances.

To its antiseptic qualities, and its faculty for absorbing oxygen, the bisulphite of lime joins very great powers of clarification. This gave me the idea of the following experiments:

I mixed 50 grammes of sugar-candy, 250 centimeters cubes of milk, 250 centimeters cubes of water, and 50 centimeters cubes of a solution of bisulphite of lime, at 10° of the areometer of Baume. I boiled and filtered to separate the parts that were coagulated. The concentrated liquid gave a mass perfectly crystalized, which, examined without drying, or purifying, gave 92 per cent. of sugar, by direct notation, and 93.5 after inversion by chloro-hydric acid.

The defecation was easy and complete. The sugar was preserved intact. The water adhering to the crystals, and the salt of milk found in the mass, explain why here was only 92 per cent. of sugar in the 100.

I employed in another experiment 50 grammes of sugar-candy, half of an egg, white and yolk mixed, 25 centimeters cubes of milk, 75 centimeters cubes of solution of bisulphate of lime, and 450 centimeters cubes of water. The mixture boiled and filtered, gave a liquid which crystalized without molasses. The polarizing apparatus gave 85 per cent. of sugar by direct notation, and 86 after the inversion. There was then only the cane sugar, and 13-100 composed of hygrometric water, the excess of the bisulphate of lime, the salts of milk, &c.

The bisulphate of lime at 100° (centigrade) acts as a defecator. It separates the albumen, the caseum, and as will be seen hereafter, the azotized matters analogous, which exist naturally in the cane and the beet. This separation is effected without loss or change in the sugar, except that which may be estimated at 2-100 of the mass, of which no count can be taken in experiments of this nature.

It remains at present to be seen what part of the bisulphate plays in preventing the colorization of the syrup.

The coloring matter of cane or beet syrup comes from four principal causes—

1. The substances containing the coloring matters which are dissolved in the juice.

2. The contact of the air and the pulp creates rapidly coloring matters which are added to the preceding.

3. The heat employed in the evaporation in changing the character of part of the sugar, and the other substances connected with it, forms also coloring matter.

4. The air, the lime and the ammonia, aided by heat, give rise during the evaporation of the juice, alkalized by the lime, to coloring matters.

The bisulphate of lime carries away, almost immediately, the coloring matter which exists in the cane and the beet. It prevents the formation of others during the process of manufacture, and especially of those which require to form them the action of the air and a free alkali. The bleaching power of the bisulphite of lime, with regard to the original coloring matters contained in the cane and the beet, is not absolute. It appears to act by a colorless combination which is formed between these substances and the sulphurous acid. This effect is well known to chemists. When there is a sufficient quantity of green matter to be seen in the stems or roots treated, we frequently see the syrup, after losing its color under the action of the bisulphite, become slightly tinged again as it concentrates, and again colorless when longer subjected to heat.

In preventing the coloring of the pulp the bisulphite of lime is wonderfully efficacious, and so durable that too much cannot be said of its power. I have kept for six months, in badly covered vessels, the pulp of beets, which remained colorless from the effect of the bisulphite, when it is well known that, under ordinary circumstances, they would have become very brown from the action of the air.

I do not hesitate to say that there are many cases where the bisulphite might be most efficaciously employed to prevent the formation of coloring matter, which give so much trouble to destroy when once formed; such as those that stain the filaments of hemp or of flax, after steeping, and indigo after it is precipitated, bark juice employed in tanning, the extracts of certain dye woods, &c. But all these points will be examined hereafter. For the moment I content myself with the statement I made above, that coloring matters that are spontaneously produced without heat in the pulp exposed to the air, never make their appearance when the bisulphite of lime is used.

I will add that the evaporation without artificial heat: 1st, of a liquid formed by dissolving in water cane sugar; 2d, of cane syrup, and, 3d, of beet juice, there will be no color where the bisulphite is used, and that when artificial heat is used for evaporation the coloring is scarcely perceptible. Nay, more, that the sugar obtained by this process from red beets, is completely colorless.

I have never observed perceptible discoloration, except in rare instances, and even then it was so slight as to be of no consequence in the manufacturing of a large quantity.

It is thus proved that the bisulphite of lime may be used with success in the extraction of sugar from cane or beets:

1. As a powerful antiseptic, preventing the production or action of fermenting matter.

2. As, from its affinity for oxygen, capable of preventing the changes which the presence of that agent causes in the juice.

3. As an agent which at 100° (centigrade) defecates the juice, and removes from it all the albumen and coagulated matter.*

4. As carrying away the pre-existing discoloration.

5. As an agent capable in the highest degree of preventing the formation of coloring matters.

6. As capable of neutralizing all the hurtful acids which may exist or be formed in the juice, substituting for them an acid almost inert (sulphurous acid).

It remains to be seen under what form or in what quantity the bisulphite of lime should be applied to the cane or beets. What new facts may be discovered in manufacturing a large quantity, and what inconveniences may over balance the advantages it seems to offer. This is what I now intend to examine, arguing from my own experience without exaggeration, but also without timidity.

One of the thoughts which has the most sustained and excited me in the course of my researches, was the hope, that, in the equatorial regions at least, sugar might be extracted by the heat of the sun alone. What would prevent, that, once preserved from change, the juice of the sugar-cane should be abandoned to slow crystalization in the open air, like salt in the salt marshes? I should say there was no obstacle, and I call to witness all those who have seen my experiments. They have all been of the same opinion. This opinion and this desire will explain why the experiments I am going to state have received the direction I have given them.

It is well known that there exists in Murcia manufactories for making sugar from cane. They have resisted all the vicissitudes that the commerce of sugar has experienced for sixty years, and are still in full activity. It is from these manufactories that a friend procured me some hundred pounds of fresh sugar-canes for my experiments. They reached the laboratory of the Sorbonne, in Paris, where I made my experiments in a good state. They were pronounced by persons who had been in the colonies and were acquainted with the subject, to have been imperfectly ripened. A good many were worm-eaten. My experimenst, then, from such materials, could not be expected to be very satisfactory; nevertheless, the first essay I made filled with astonishment persons accustomed to the manufacturing of sugar, and capable of judging the results obtained.

The juice was extracted by a coarse grater, adding bisulphite of lime during the operation. It was clarified by boiling, and simply filtered through a cloth strainer. The concentrated syrup was filtered a second time, and left to crystalize slowly. This it did to almost perfect dryness. An analysis by alcohol could have given nothing better, either in quantity or quality. It was even more colorless than sugar obtained by alcohol.

In these experiments all the sugar contained in the juice took a solid and crystalized form. The crystals were large and firm. They were not more colored than ordinary sugar candy, which they resembled in appearance. The traces of molasses were almost imperceptible.

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*There remains, however, after this clarification, a matter which is colored by the air, or the influence of an alkali, first violet and afterward brown. It is probable that it is an azotized substance.

Taking into consideration the almost entire purity of the juice of the sugar-cane, which, really once clarified, is only sugar and water, and considering also the aptitude which cane sugar has to form large crystals, in which quality it is far superior to beet sugar, I am sure that the first colonist who attempts to evaporate slowly a quantity of syrup will perceive that the crystals, in size, color and appearance, are so superior, that the advantages of the process will be entirely evident to his mind.

I changed the proportions of the bisulphite of lime; I experimented separately on the ripest canes, on the greenest, and on the worm-eaten, and in all my essays the result was the production of crystalized sugar. I never found a spoonful of molasses that could not be crystalized.

The analysis of the juice and the action of the bisulphite on it were always the same, both as regards the substances contained and the quantity of sugar obtained.

The operation is so simple and so correct in its results, that it appears almost necessary to do wrong expressly in order to fail to extract all the juice from the sugar-cane.

Every one knows that the juice extracted from the sugar-cane is sometimes not more than the half, never more than two-thirds, of the quantity really contained in the cane. There remains, then, in the crushed cane, at least a third of the saccharine matter. To extract this by washing, in warm climates, is impossible, on account of the rapidity with which fermentation takes place; but if the bisulphite of lime is mixed in the water used in washing, nothing is easier. There is no need for hurry, and the washing may be so perfect as to extract the last particle of sugar.

Thus obtained, these washings would be nearly as rich as the juice itself. Treated in the same manner, by defecation at 100 deg. (centigrade), simple filtration and concentration into syrup, and then slow evaporation, they would give the same results as the juice.

I tried, with the crushed cane, this method with a lively curiosity, and I succeeded in producing large crystals of pure sugar, and much superior in color to the best sugar sent us from the colonies.

Even more, and that for reasons that chemists had already discovered, the skimmings and the filters employed in filtration, after several days' exposure to the air and the danger of fermentation, yielded pure crystalized sugar. It was on y necessary to wash all these substances in water charged with the bisulphite of lime, and evaporate this water.

Thus, the bisulphite of lime rendered the sugar almost as unalterable as mineral salt; that of the juice, the crushed cane, the scum, and the filters, produced the same large grains, of a colorless or a slightly yellow candy. All this requires neither care nor study—and nothing renders hurry necessary. As long as the bisulphite exists in the smallest appreciable quantity in the liquid, it prevents all alteration.

I know nothing of the colonies; and it would not therefore, become me to pronounce if the employment of such a process would, or would not, have the effect of producing division of property, by enabling the negroes who inhabit them to extract the sugar profitably on

a small scale; but I do not hesitate to say, that my essays proved that this change in the cultivation and in property is possible.

It may be objected, that powerful mills are necessary to crush the cane. This is not so. A root-cutter and a grater are all that is necessary, because the washing is so complete, by the employment of the bisulphite of lime, that all the juice may be extracted in that way from the cane, cut or torn in the rudest manner. However that may be, I will now give the method I arrived at, treating the canes which I had sent to me:

1. I broke up the canes by means of a beet grater, watering the pulp during the operation with a solution of the bisulphitite of lime. I then crushed out the juice, which was boiled, filtered and evaporated by fire to the density of about one-third what the cold syrup should be, filtered again, and left to slow crystalization. This gave me in a few days, a mass of candy, from which it was impossible to extract any molasses.

2. The crushed cane or pulp, whichever it may be called, was wet with water, submitted to another pressure, which produced another juice, less rich. This, treated like the first, gave the same results.

3. I repeated again this last operation.

For all these experiments, I employed one per cent. of the weight of the cane of a solution of the bisulphite of lime, at 10 deg. areometer, Baume. I took out the whole of the sugar, and found all of it in a solid form. My operations, though evidently susceptible of being applied to manufacturing on a large scale, presented, at the same time, a perfect analysis of sugar-cane.

If experienced chemists, who, like Mr. Caraseca in Havana, and Mr. Araquin in Louisiana, are in reach of sugar manufactories, will repeat my experiments on a larger scale, I am sure their opinion will be soon formed.

I will now mention the objection to my process. The sugar obtained by it has a taste of sulphur; but it loses this in three manners:

1. Crushed and exposed to the air, the sulphite becomes neutral sulphate.*

2. Exposed to an ammoniacal atmosphere, the sugar loses its sulphurous flavor, and often takes a taste of vanilla, very agreeable, but it is sometimes slightly colored.

3. Clayed so as to lose about ten per cent. of its weight, it gives a sugar equal to the purest and whitest sugars of commerce.

The syrup used in claying may be regenerated by evaporation, and gives crystals similar to the others.

For manufacturing I recommend the third process.

I will only, for the moment, slightly mention a circumstance that may cause difficulty. The sulphates and the sulphites are changed by the contact of organic matter into sulphurets. The formation of sulphurets, and the appearance of free sulphur, which would probably be the consequence, are not presented in any of the numerous specimens which I possess, and of which some, of beet sugar, are already quite old.

*As crystalized sugar does not contain solid bisulphite, but only neutral sulphite, this can only give neutral sulphate. If the sugar is acid, this acidity is derived from the acid phosphate of lime, formed by the action of sulphurous acid and the phosphate of lime in the juice.

I recapitulate: One hundred kilogrammes of cane contain about eighteen kilogrammes of sugar, when in good condition. They yield sixty kilogrammes of juice, when well managed, and this gives twelve kilogarammes of sugar.

There is usually extracted from the juice, from six to seven kilogrammes of unrefined sugar.

There is, therefore, a loss of five or six kilogrammes in the operation; besides which, six kilogrammes are left in the crushed cane.

It results from this, that, by applying the new process to the jnice alone, twelve kilogrammes of refined sugar will be obtained, in place of six or seven kilogrammes of unrefined sugar. If the crushed canes are also submitted to this process, seventeen or eighteen kilogrammes of sugar will be obtained from one hundred kilogrammes of cane; that is to say the whole amount of saccharine matter contained in the cane may be extracted. In saying, therefore, that the yield of sugar from cane might be doubled, I stated nothing in which my experiments did not bear me out, and certainly was far from exaggerating.

The future will decide. I await its judgmnt with the most perfect confidence. The bisulphite of lime will enable the manufacturer to do all which the chemist can do with alcohol; and if the latter extracts eighteen kilogrammes, the former will also, one of these days.

Whether the evaporation should be carried on to the end by boiling; whether the syrup should be concentrated one-third, and finished in the drying room; or, whether the evaporation should be entirely carried on in cases exposed to the sun, is more than I am able to decide. Local circumstances, and studies on the spot, will determine this. I will only remark, that the use of the bisulphite, by preventing fermentation, renders the use of large, shallow cases or reservoirs of wood easy, and permits even rooms of graduated heat for drying.

I did not have at my disposal a sufficient quantity of juice to try these different methods, but I desire to show that they are worthy of essay, and I recommend to the attention of Mr. Caraseca, or any other chemist, in a favorable position for trying it, the following experiment:

I took beet juice, to which I added four per cent. of the normal solution of bisulphite of lime. Having clarified it, put it into a pine case, which I had previously washed well with the bisulphite. The bottom was pierced with holes, each of which had a string passed through it, which hung down, and thus afforded numerous means for the juice to run off, and a large surface for evaporation. As fast as the juice was collected in a vase placed under the strings, it was poured over again, and thus concentrated by passing several times; the syrup was placed in a flat vessel, where it crystalized almost entirely. In the little molasses which was separated from the crystals, new crystals were formed, and these last were as perfectly characterized as the first.

If, with beet juice and an imperfect apparatus, this experiment succeeded, why should it not with cane juice, which is purer and richer, in hotter countries, in the open air, and with a more carefully arranged apparatus? Why not seek, in the heat of the sun, where it is so intense and so certain, the means of replacing coal or other combustibles which are not to be had?

Whatever may be the means of evaporation which experience may prove to be the best, the striking results obtained in operating on a few hundred pounds of cane, has convinced me that the extraction of sugar in the colonies will hereafter follow new and more profitable methods. The juice and crushed cane being placed out of the reach of fermentation, I was, therefore, fully disposed to take, immediately, the measures necessary to insure a prompt essay of my system. This I hope to do (with the aid of Mr. de Tracy, Minister of the Marine in France, who has shown me much kindness), either in the French colonies or in Algiers, where many well informed persons think that the sugar-cane would succeed perfectly, and where the greater quantity of sugar given by my method would enable them to produce, at a low price, sugar which, from its favorable position, would command the market of the Mediterranean.

(*To be concluded in our next.*)

ART. IV.—FORMATION OF THE TERRESTIAL GLOBE.*

1st. Was there a point of time in the history of the earth, when it consisted in a *fluid* state?

2nd. And if so, are not all substances (metalic and mineral, organic or inorganic,) now upon the globe, excepting granitic or igneous formations, of meteoric origin?

The first proposition may be confidently affirmed; and the truth of it supported by the following facts and arguments, viz:

1st. The fact, so well established, that the earth is, in its figure a spheroid, and not a sphere (an oblate spheroid,) the equatorial diameter exceeding the polar by 26 miles.

This being a fact, it is easily demonstrated upon the most rigid principles of science, that the equatorial diameter of the earth bears precisely that proportion to the polar, which is due, under the circumstances of motion, gravity of matter, &c., &., in a *fluid* state, and that it could not have taken that form, under any supposition, as to its consistency, but that of a fluid condition.

2nd. The evidences which we have, by examining the formations of the globe, that at any rate the foundations of stratified rocks, (primitive formations,) were once in a state of fusion, or rather that the lower or primary strata, are of igneous origin, and must have existed in a fluid state.

3rd. The evidences, that even now, the nucleus of the earth is in a state of fusion, or fluidity, as deduced from the phenomena of volcanoes, and injected dykes, into the superposed rocks, from below. And the fact that their molten materials, thus ejected from the bow-

*A discourse delivered by David Deshler, Esq., before the Literary and Scientific Club, Tuscumbia, Alabama.

els of the earth, or injected into stratified rocks, are of precisely the same elementary composition, as the primitive formations, is conclusive as to their common origin, as well as of the originally fluid state of both.

If the first proposition, under consideration, be admitted (and it cannot be controverted,) the truth of the second is inferred, from the fellowing considerations—to wit:

1st. If the globe was at any time in a fluid condition the degree of temperature must have been such, that granite, and all crystaline rocks, were in a molten state; and hence, all matter capable of being volatilized, at this degree of temperature, was expanded in a gaseous form, and formed a component part of the then atmosphere, surrounding our globe. And in this state of the earth, all matter that we now find superposed, on the primitive crystaline rocks, must have been suspended in that atmosphere.

2nd. From geological research, there is abundant corroberative evidence of the correctness of the above inference, from the following enumeration of facts—viz: In the primitive and lower transition formations, no fossil remains of organized beings, of any kind whatever, are to be found imbeded in its strata. In the middle and upper transition strata, the dawn of life and organism, is first perceived, in the remains of the lowest form of living animals; but consisting of only a limited number of species, and without exception of marine inhabitants. In the secondary formation, we find, first, in the lower of that series, animal remains greatly in advance of those of the last period—this part being prolific in the lower families of vertebrated animals, of the saurian or lizard class; which were all inhabitants of the ocean, and furnished with paddles instead of feet. In the upper secondary formations, the remains of other, and superior saurian animals, closely allied to living species, of crocodiles and lizards, are fully developed, having feet, and were evidently of amphibious habits; and some of these species are supposed to have been herbiverous. Fossil remains of birds are also found in the secondary strata, but extremely rare. Vegetable remains are found, first, with very few exceptions, in the carboniferous, or coal formation—and here these are very abundant, but of inferior or less perfect organism, compared with those found higher in the series.

In the tertiary formations, vertebrated animals of the highest class, and mammalia are discovered, and cetaceous animals, allied to the whale and seal, are also found, but still very scarce. The bones of herbivorous land quadrupeds, of enormous size, occur in the upper strata of this series, that is the tertiary, or what may be termed the last, before the present geological formation. These last are found in great abundance in the northern part of Europe and America. In this formation, the fossil remains of vegetables are of the most perfect class of plants and trees, some of the most recent being perfectly analogous to those now flourishing in different parts of the world. The recent or present period has ushered in man upon the stage of life, with his co-inhabitants, both animal and vegetable; and from the earliest period of the knowledge of man to the present day, no important or very perceptible changes have occurred.

Now, from these premises, let us set out with a view to arrive at a

conclusion on the second proposition—viz: That if the earth was once in a fluid state, "all substances (metalic or mineral, organic or inorganic) now upon the globe, excepting granitic or igneous formations, are of meteoric origin," and were at one time suspended in the atmosphere.

Under the state of temperature that must have existed at the period of fluidity of the globe, there cannot be any doubt, but all the matter of every description which we now find superposed on the primitive rocks, must have been volatilized, and driven off to form part of the primitive atmosphere, as before remarked. But, first, before we proceed any further, let us examine into the general character of the substances supposed thus to have been driven off from the nucleus, and suspended in the atmosphere.

The elementary substances of which the solid matter of our earth is composed, are the earths, silix, alumina, lime, and magnesia; those four, with iron, are estimated to compose nineteen-twentieths of the known solid matter of the globe. The different kinds of metals, the inflammable principles—carbon and sulphur, and the alkalies, potash and soda, and muriatic and phosphoric acids, occur also in the mineral kingdom.

The earths, when pure are only fusible at very high degrees of temperature, but when combined, in certain proportions, they are fused with facility, at comparatively low degrees of heat.

Now, when it is remembered that these earths themselves, are not simple elements, but compounds; as in the case of lime, composed of the metal calcium and oxygen; which when again combined with carbonic acid, forms limestone or marble; and the same substance, lime, combining with sulphuric acid, forms the rock called gypsum. The same is true in regard to alumina, and all the other earths. The earths, indeed, prove to be metalic oxides, combined with various substances, liquid and gaseous, and the acids, producing nearly all the solid compounds which form the crust of the earth. Iron seems to be very abundant, and forms a constituent of numerous rocks, in all the stages of the formation of the globe. Under this aspect, it is clear, that all these materials, would be fused, and even volitilized, at comparatively a moderate degree of temperature, and the whole expanded into air.

The fact, that no fossil remains are discovered, until the transition period was considerably advanced, supports this idea. Since during the congelation of the primitive strata, the temperature was too high to admit of the condensation of fluid, of ordinary kind, much less the maintenance of animal, or vegetable life. It may be fairly presumed (and it is the only rational presumption,) that, during the period of congelation of the primitive rocks, and the deposition of the metamorphic strata, great convulsions must have occurred, producing fractures, and dislocations amongst the crystaline rocks, and contortions, and curvatures in the stratafied, or sedimentary formations. And, accordingly, as might be expected, upon this hypothesis, we find the evidence of these identical operations, from an observation of these strata. The crystaline rocks are broken into fragments, and disrupted, and scattered in every possible form, and direction, immaginable; whilst the sedimentary (slates &c.) strata, are contorted, and curved, giving every evidence, that these were in a semifluid

condition, and yielded, paste-like, to forces then in operation; and how perfectly natural was it for the older geologists to give the expressive distinction, of "fragmentary," to this period of the history of the formation of the world—since, with the exception of some of the metamorphic rocks, nearly the whole series of the transition formation, is made up of fragments, of primitive rocks, cemented together by the deposition of a variety of elementary substances, which it would seem, had been holden in solution in a primitive ocean.—The breccia, and pudding stone; indeed the whole conglomorated family of rocks, afford an illustration of this view of the subject.

But as we should reasonably expect, in the process of time, after the crust of the earth had to some extent congealed, and the temperature lowered, by radiation of heat from the nucleus, into space; a time arrived when vapor condensed, and fluid descended, from the atmosphere, forming the primitive ocean; in which we find a moderate quantity of purely marine life, of the very lowest degree of organization, comprising some of the radiata, molusca, &c., (encrinites, trilobites, bivalves, &c.) We must also allow that all this time, a condensation of a diversity of the grosser elements of the atmosphere was going on, which was precipitated and deposited in the ocean, forming sedimentary strata, as found throughout the transition period, and particularly in the metamorphic series. Whilst such pure metals, as have their *boiling* point of temperature, in accordance, would also be deposited.

At the conclusion of the transition period, the coal formation was deposited, and as might be expected, under the circumstances, of such an enormous quantity of carbon, and other elements, entering into the composition of mineral coal, having been parted with by the atmosphere, a complete change of condition of our globe, seems to have supervened. For, immediately after this epoch, in the lower secondary strata, we find an abundance of animal remains, belonging to the class of vertebrata (saurian or lizard class,) entirely distinct from any former inhabitants of the globe; yet these were marine or aquatic animals, as must be inferred from their organization.

As we ascend, however, in the series of strata belonging to the secondary period, there is evidence in abundance, of gradual advance or improvement, and change, in the condition of the globe; as inferred from the development of higher classes of organism, in both the animal and vegetable kingdoms; and when we arrive at the upper strata of this period, we find saurians closely allied to living species of the crocodile and lizard, evidently habituated to live either on land or water (amphibious): as also some of the species mammalia; and from the fact, that some of these were herbivirous, it is further inferrable, that at that stage, a diversity of land and sea existed. This period of the world is concluded, by the deposition of the cretaceous, or chalk formation; which by its draft upon the atmosphere, for the immense quantity of lime and carbonic acid, in its composition, presents another great epoch in the history of the formation of the earth; and in corroboration of the hypothesis, under consideration, immediately after this epoch, almost an entire new creation of organized being s present themselves upon the stage; indicating very clearly a great change in the condition of things. The classes quadruped, and

cetacea, now make their appearance; and finally, before the close of this period, the enormous herbivirous quadrupeds, (the mammoth, the mastodon, &c.,) are ushered in upon the stage of life; the development of the vegetable kingdom, keeping pace with that of the animal.

The close of this period was marked by the erratic, or bolder formation, and great glacial action; by, or through whose agency, the large quadrupeds seem to have been totally destroyed, and became extinct. This seems to have been an important era in the series; for immediately succeeding this, man with his co-inhabitants, makes his appearance upon the stage. The agencies in activity at the close of the tertiary period, seem to have been unlike those of the several great preceding epochs. It would seem that there was a great change in temperature; an extraordinary degree of refrigeration, as well as oceanic action, as may be inferred from effects produced by ice, transporting and distributing the bolder rocks, over all northern latitudes. However, at this epoch it is probable, that the changes produced, were more in reference to the land and sea, than the atmosphere; and the improvements in the animal and vegetable kingdoms, are not so much to be observed in the production of a great number of new genera and species, as in those of a few of an entirely new order, and of superior organization. I allude to the classes or genera, bimana, and quadrumana; these are, decidedly, of the latest creation, and the first (bimana), the only being on the earth possessing rational faculties. We have thus traced the history of the globe, from a period anterior to any living existence upon it, down to the present period, in which we live; tracing a development from the less to the more perfect condition, step by step, brought about, as it would seem, by natural causes, and according to natural laws, which, although not very palpable to our short-lived experience, are yet unquestionably in operation in our day, and may continue for ever.

To recapitulate the arguments in support of the second proposition. We have shown by the appearance of the primitive crystalline rocks, as well as from the metamorphic strata, that there could not have existed, an ocean of liquid upon the globe, at all analagous to the present ocean, and that such did not exist until the transition period was far advanced; that prior to the commencement of the secondary period, an ocean did exist, and but little, if any land; that during the secondary period, land increased from time to time, and was in some proportion to the sea, at the close of that period; that land continued to increase during the tertiary period, and became very productive in vegetables, towards the close of said period, (as inferred from the size and number of herbivirous land animals). And that but little change has been discovered, geologic or meteoric, since the commencement of the present period; but that changes are nevertheless in progress, analagous to what has preceded, but so slow and minute, that in the 6000 years which we allot to our own history, they are not perceptible.

Now, all this matter superposed upon the foundation rocks, has been derived from somewhere. It certainly did not come out of the bowels of the neucleus of the earth (that would be an absurdity to suppose): it must therefore have been precipitated from the atmosphere, at such times, and in such quantities, as the crust of the globe fairly and sufficiently indicates.

In conclusion, let it be remarked, that the fact of our not being enabled to perceive clearly any changes in the atmosphere, or ocean, since the commencement of the present period, is only an illustration of the exceeding slowness, with which the process is progressing; and may give us some faint idea of the immense space of time that must have elapsed, in bringing the globe in the condition in which we now behold it.

It is further to be remarked, that, according to this theory, all metalic substances were volatilized, and expanded into the atmosphere. If the metals so vaporized remained, or were capable of being maintained in their pure, or uncombined and metalic state, the order of their condensation and disposition would be in accordance with the boiling points of the several metals. So that the metal, with the highest boiling point, in temperature, would be condensed first, and deposited lowest in the strata; and so on through the whole list. Now, by ascertaining the boiling point, or point of vaporization of each known metal, a scale might be projected by which we could determine beforehand the succession, and even the position of strata in which the respective metals should be found. Since, however, nearly all the metals exhibit strong affinities for different elementary substances, combinations have been formed in such a great variety of proportions and ways, that this mode is put out of the question; and as might be looked for, under these circumstances, many of the leading metals are found imbeded in all the various strata, from the primitive formation up to the most recent inclusive.

There are, however, some few of the metals that remain pure and uncombined; and to this extent, our hypothesis is corroborated and supported. Gold and platinum are always found pure; and these are also found in a given set of strata or formation, (the metamorphic,) and are never found *in situ* excepting in this formation. The same may be said of other *simple* bodies; as, for instance, the precious stone, the diamond, this being a simple element, viz, pure carbon—it is found crystalized, and imbeded in a particular formation, and nowhere else. It seems to us, these facts, when properly considered, ought to have great weight in support of our theory.

OBJECTIONS TO OUR THEORY, STATED AND ANSWERED.

As our theory "on the formation of the terrestrial globe" is in conflict with the generally received opinions on the subject, in many important points, it may be proper to anticipate some of the objections that would probably, at once be offered, and endeavor to clear them up, or obviate them as far as may be in our power; by showing that the generally received views on the matter are unsatisfactory, and, that certain phenomena, (indeed, we contend all,) can be much more ration-

ally explained, than they can be, under the views now popular in the world.

The first special objection to our hypothesis, that will be urged, would, no doubt be, that in regard to the coal formation; which we presume to have been deposited in strata, in precisely the same manner, and under similar circumstances, as the calcareous formations. But, the generally received opinion is that coal is of vegetable origin; that a luxurious vegetation, of plants and trees, covered those portions of the earth, now occupied by beds of coal; that this vegetation was submerged beneath a deep sea, or ocean, then carbonized, and made into perfect mineral coal; that after strata of shale, and sand-stone, were deposited over the stratum of coal, of more or less depth, the whole was upheaved, above the surface of the ocean, and the superposed strata, above the first coal seam, were decomposed and became fertilized to such an extent, as to produce another crop of vegitation, similar to the first; and the second submergence occurred, forming the second stratum of coal, from the carbonized vegetation; the strata of shale and sand-stone, were again superimposed, in the same order as at first, and in due time, the second upheaval supervened; and according to the "Vegetable theory," this process, of alternate depression, and upheaval continued, until the whole series of the coal formation was accomplished.—According to the best authorities, (Professor Phillips, and others) there are from twenty to 60 seams of coal, alternating with sandy and argillaceous strata." In order then, to accomplish this formation, in the series of strata, the land had to be submerged, and upheaved, alternately, from *twenty to sixty times!* and this had to take place, in order to carbonize the vegetation, from which coal was to be produced. And yet, it is acknowledged, that the geological evidences are wanting, to indicate that such alternation of elevation and subsidance, has actually occured.

It seems, from all that we have seen advanced, in support of this theory, that the fact of there being found some vegetable impressons, in the strata separating the coal seams, and occasionally (but not generally) in the coal itself, is the foundation for the conclusion, that "Coal is of vegetable origin." It does seem very clear to us, that too much importance has been attached to the fact, that the vegetable kingdom has in its composition a large portion of carbon; forgetting that this subtance, carbon, is a simple element, and enters largely into the composition of minerals, as well as furnishing the substance, in a large proportion, in animal organization. Why then, should we resort to vegetation alone, or principally, for a supply of carbon to produce coal? Where did this element originate, entering into calcareous formations?—According to Mr. Bakewell, (Geology,) the calcareous ranges of the Jura, and the Alps, in Europe, would form a bed of pure carbon, nearly 1,000 feet thick through the vast extent of those mountains. Now, it has never been pretended that limestone is of vegetable origin.

But, supposing coal to be of vegetable origin; whence did the vegetable tribes originally derive the carbon, of which their solid parts are so largely composed? Mr. Bakewell says: "Carbon either previously existed in nature, or trees and plants, had the power of forming it from more simple elements." "Neither of these opinions," he continues,

"is improbable, nor, are they at variance with each other;" and further he says, "If carbon be a compound substance, of which hydrogen is a constituent part, it may be formed by process of vegetation, or it may exist also, in the animal kingdom, independent of organic productions," &c. Here, it seems to us, we are upon the very *footprints* of the error which led Mr. Bakewell, at least, into the conclusion, that coal must be of vegetable origin. Is it not a well established fact, that carbon is one of the simple elements of matter? and is it not a property of elementary, or atomic matter, to remain *itself!* neither capable of being generated, destroyed, or annihilated, by any process, natural or artificial.

Supposing again, however, that coal is of vegetable origin; and suppose that we enquire into the matter, as to the amount of vegetation by volume, it would require to furnish the carbon requisite to form certain well-known coal-fields. It is estimated by an intelligent writer in the "Quarterly Review," (published at Louisville, Ky.,) that the Wyoming coal basin in Pennsylvania, contains about five hundred square miles of surface, and that some of its coal beds are twenty-eight feet thick; and the coal has a purity of ninety-three per cent.; and again, that it would require that the timber, (pine timber) "would have been piled upon the coal lands, in a bed of two hundred and eight feet thick; and it must have been so compact, that when covered by inundations, carrying sand and mud, not a particle of sand could enter between the timbers, in any direction."

Under the supposition of this being pine timber, the writer estimates 14 per cent. carbon. But it has been estimated by good authors, that the vegetation of the coal period was of a very succulent character, yielding but from 1 to 2 per cent. of its volume in carbon; thus requiring a atratum of the then vegetation of upwards of *fourteen hundred feet* in thickness! Does this, as a hypothesis, look at all reasonable? Why should we not dispense with all this complicated machinery of organism to furnish carbon, and the immense power required to elevate and depress the coal beds a half a hundred times, or more? Simply in order to account for some fossil remains of trees and plants, not imbeded in the coal itself, (excepting in a few instances,) but in adjacent or contiguous strata.

It cannot be otherwise, than, that the plants and trees found in coal formations are simply petrified. The mineral coal having been infiltered into the vegetable texture, as in other cases, silex, or lime, had been thereby mineralizing the vegetable substance; carbon being the element.

How could a tree be carbonized in its full size if it depended upon its own carbon? Yet such specimens have been found imbeded in solid coal, showing, beyond doubt, that such a tree must have derived six-sevenths of its carbon from a source out of, and beyond itself. The truth is, that it is just as easy to account for a carbonized petrifaction, as it is for one silicified; for the process is the same in both—the difference is the mineralizing element.

We trust the facts and circumstances now related, will justify the conclusion that "the vegetable theory," in regard to the origin of coal is entirely unsatisfactory and untenable, and that it ought to be abandoned. It now remains for us to show that our hypothesis (call

it the Meteoric Theory, if you choose) can be sustained, and that it will account for and explain the several phenomena peculiar to the coal formation, quite as satisfactorily and fully as the formation of limestone or any other geological strata can be accounted for upon any hypothesis yet advanced in regard to them, and that in a way so simple, compared with the "vegetable theory," that it shall seem much more like tracing out Nature's doings.

As must be already understood or inferred from our theory, strata of limestone were formed by the following process, viz:

At the period of such formation there was a peculiar condition of the atmosphere, as to temperature, state of electricity, &c., favorable to a condensation of calcium, oxygen, and carbonic acid, these being precipitated from the atmosphere into the ocean of fluid, (of some kind,) chemical activity and combination supervened; and we may conceive that the ocean, thus saturated, would form a menstruum from which was precipitated and deposited, after combination, strictly in accordance with the laws of chemical affinity, amongst the elements thus held in solution, in horizontal strata at the bottom of the ocean, the limestone formations. And these strata would be repeated or intermitted from time to time, as appropriate atmospheric condition, as circumstances would occur.

After the disposition of a stratum of limestone, one of a sileceous character might occur, or one of a fragmentary, where the menstruum of the ocean would furnish merely the cement, as iu the conglomerate family of rocks, the fragments being of crystaline primary rocks (slates, shales, and sandstones, would all be thus accounted for.) Now when we come to account for the coal formation, we have nothing further to do but to substitute a larger proportion of carbon, and exclude some of the elements that enter peculiarly into carbonate of lime, and saturate the ocean, which is to hold the elements in solution, when the same chemical forces will, by their action, precipitate and deposite a stratum of mineral coal, and without either elevation or depression of the bed of the ocean, a seam of shale, and next a stratum of sandstone, or grit, may be deposited; and so on till the whole series of coal beds shall have been deposited.

It may, however, be necessary here further to explain, in regard to the coal formation, that from all the facts collected on the subject, upon the best authorities, that the coal was deposited in basins, lagoons, estuaries, and also in an open, but probably a shallow sea, with numerous islands, (and these estuaries and lagoons not always in communication with the sea.) This accounts for the greater abundance of vegetable remains found near the edges or lips of coal basins; and by considering the unequal depth of the basin-shaped reservoirs, containing the menstruum from which the coal was precipitated, we can account for the unequal thickness of strata of coal; (always thin at the edges, and thickening at the centre;) for, of course, these must be in proportion to the depth of fluid holding the elements in solution.

In illustration of the formation of coal, upon the principles of our hypothesis, we may cite the existence of bitumenous lakes, where the process is actually going on, even in our time. There is said to exist, a bitumenous lake of some considerable extent, in the island of Trinedad, presenting the following diversity of conditions, viz: Part

resembles true coal (its fracture conchoidal,) another part is soft, and past-like; whilst another portion is perfectly liquid. We will merely further say, on the subject, that whilst carbonate of lime is of chemical precipitation and deposition, the coal beds are of precisely an analogous mode of formation, if our theory is correct. That is to say, both are chemical products. But supposing once more, that coal is of vegetable origin; did not the vegetation that produced coal, derive its carbon from the atmosphere? It certainly did, for even at the present time the vegetation of the earth receives its carbon from that source, and this will not be controverted.

Another special objection will probably be alledged to our theory, by those holding the doctrine, that chalk and many other calcareous, and some seliceous strata, are the product of the secretion of animals, and therefore, these formations could not be referred to a meteoric origin. On this point, it is simply necessary to say, that all these formations, including the coralline, derived the materials from the same source, as that of coal and ordinary lime stone; but, that instead of a direct chemical action, amongst the elements, to produce the rocks in question, the animal chemist, was employed to elaborate, and accomplish the production.

Another objection will probably be urged, viz: That our hypothesis would at once lead to the "nebulous theory," in regard to our planet, and other bodies in space. All that we can say in reply to this objection is, that if it should lead in that direction, it is not our fault. We must only take care to believe what is rational and true, and if our mode of accounting for operations in nature, so very interesting in themselves, should prove suggestive of a single idea, that may lead to a development, or better understanding of the laws of nature, (and thereby enlarge our views of Deity,) we shall feel amply compensated, and highly gratified.

This much may be said, in reference to our theory; and to its advantage, viz: *It points out a source, from which the elements forming the crust of the earth, and everything upon it, or pertaining thereto, were immediately derived;* which, it is believed, has not been attempted, under any of the theories now popular amongst us. It is founded, and stands upon the proposition, that all matter belonging to our planet, existed anterior to the solidification thereof; and that this matter, in its properties, and atomic character, as it then existed, so does it now exist; and that all changes, transmutations, and transformations, are carried on by the laws of nature, without the destruction or annihilation of a single atom, or of the creation of another.

ART. V.—COMMERCE OF THE RED SEA.

A few remarks made by a traveler, on A. H. Palmer's plan for opening, extending and protecting American commerce in the East.

Neither Abyssinian nationality nor Abyssinian dominion reaches, in our day, to the sea coast; it is improper, therefore, to name "Abyssinian" as a part of the African coast, in or outside of Bab el Mandel. The Pacha of Egypt, having been reinstalled by the Sultan in the governorship of Suakin and Massawah, claims the whole coast from Suez to Bab el Mandel, and permits no communication with the interior, i. e., with Abyssinia out of those harbors. Between Suez and Kosseir there is but a very scarce population of Bedouin Arabs. The Ababdah south of Kossier are the first African red-skins with Caucasian features met with on this coast; then come the Ageeg round Souakin; from thence to Massawah the Shoho; and from Massawah to Gobat Embada, or Bay of Tudjurra the Donakil, (pl. of Darkalee.) This bay extends about 18 miles west, and is divided in two parts by a narrow island, the inner part of which is called Gobat el Kharab, by the Arabians, or evil bay, from a conical mountain in its centre which, as the saying is, emits deadly smoke. Between this bay and the receptacle of the Hawash birket (lake) el Goobard lies the salt water lake, Birket el Assal, i. e., derisory, the Hong lake. This water-division will become, in time, the highway for commerce and civilization, to Southern Abyssinia and the Galla-regions. From Gobat-Embada to Ras Kafoon are the following Somalee tribes: the Eyssa, Gedeborsee, Ayal (children) Achmet, Ayal Toones, Habart el Hadshis, Aladjertine and Mahara. The Gabardshee, in the south of Ras Kasson, seems to belong, like the Somalee, to the great Galla nation, from which their dialects but slightly differ. The chief distinctive is the religion, the former having embraced Mohammetanism, and the latter still adhering to their old belief in "Waak," the universal spirit, without intercession of any prophet.

* Zeyla is a factory at the town of Mokka, mostly inhabited by Arabs, and protected by a garrison of a 35 match-lok men. Tudjurra, on the northern shore of the bay of the same name, is the residence of Mohammet, the Sultan of the Dankalees. This town, in some way, is a tributary to the former for military assistance received in former times. The Tudjurra slave-traders have to pay a tax of two gold dollars (real dahab a fictif money) for each slave, either to the Governor of Zeyla or to his Wakeel (proxy) in Mokka. Both the Donakeel and the Somalees carry the Turkish flag, and acknowledge the Sultan Roomee, i. e., Abdul Medjed as the Khalifa el Mummeneen,

* The author believes Zeyla on the Somalee, and Tudjarra on the Dankalee coast, to be Somalee ports.

the protector of the true believers. This shows what right the John Company had to purchase the Island of Musha, at the entrance of Gobat Embada, from the "Duodez" Sultan Mohammet of Tudjurra. Tudjurra is the seaport of Ancobar, the capitol of Shoa,* or Bar Eefat in Arabic, and Zeyla the seaport of Hurrur, distant only a five day's journey by uninterrupted traveling. Berbera is the finest harbor on the whole coast; it has no permanent buildings, and has the double quality of a fair and a free port. The fair lasts from September to March; foreign traders are obliged to purchase the protection of some Somalee tribe or other, as there is no acknowledged chieftain or governor of the fair. The three-quarters of the trade of Hurrur are absorbed by this channel, notwithstanding Berbera being a fifteen day's journey distant from the said place. Dogankal, between Zeyla and Bullahaar is the nearest point on the seacoast, and only three day's journey from Hurrur, but unfortunately its harbor is closed up by a sand bar. Even if the Joob (Juba?) were not supposed to offer a safe channel during "*three* months in the year," I don't see how this river could interfere with the Somalee caravan trade, as it goes no farther than Hurrur.

Gondar, the residence of the Neguz, (a kind of roi Francaise of old France,) is the most northern and the largest town of Abyssinia; it was, a hundred years ago, the capitol of the then United Empire, but is now only the capitol of the province of Amhara, under the leadership of Ras (chieftain) Aly. So is Adowa, which the author makes the capitol of Northern Abyssinia, but the capitol of Tigreh, its nearest seaport is Amphilah; but no other communication is tolerated by the Egyptian governor than by way of Massawah, a seven day's caravan journey from Adowa. Ras Oubee is the chieftain of Tigreh, Ras Sahlo Sehlassee of Shoa; those with Ras Aly are the most powerful chieftains of Abyssinia, and in constant fear and jealousy, one against the other.

No European power has agents in Abyssinia, if the "peres Sazaristes" vulgo Jesuites in Adowa are not mistaken as such; but in Massawah, both the English and French keep Consular agents, not so much to the benefit of traders, as to watch each others intrigues, to which the expulsion of Mr. Gobat, a Protestant Missionary, with half a dozen more of his fellow laborers, and the failure of Capt. now Major Harris, the celebrated African Nimrod's expedition to Shoa, must be attributed. Abyssinia is to the French a play game, like Otaheity and Owyhee of late—nothing else. The French never had any trade with Abyssinia, nor with the Red Sea either, with the exception of an attempt made, ten years ago, by the bark "Ancobar," fitted out in Havre, under the direction of some St. Simoniens, who had gone astray, a fine summer-day, to Abyssinia. Those gentlemen loaded the vessel with all sorts of French fineries, and among others, with suspenders, because the Abyssinians wear small clothes; with kid gloves, because the Abyssinian ladies showed so much fancy for white skin; with pomatum, to put tallow out of fashion; snuff-tobacco to be chewed, (as our fair sex sometimes do in the south.) This is all literally true and no joke; that the attempt utterly failed need scarcely to be told, nor that it

* The author believes Shoa to be the name of a town.

never has been tried again, Coffee is called in Arabic "boond," and in Galla "boona." There is a tradition in Yemen, that Scander (Alexander) the Great, on his return from India, opened Bab el Mandel (gate of tears) with his sword. There he was welcomed by the Neguz of Abyssinia (Habesh) and his court. Scander, seeing the Abyssinians afflicted with corpulency and yellow countenances, made to them a present of the ghat-shrub, from "Bar el Sinn," (China,) as an antidote; and the Neguz, in exchange of politeness, presented him with the coffee tree, which Scander at once planted in the Arabian soil. The leaves of the ghat-shrub smell faintly like tea, and look also, pretty much like tea leaves; the Arabians of the Yemen are in the habit of chewing those leaves, as the Americans chew tobacco. Both the coffee and the ghat grow wild in the Galla country, but not in Arabia. M. Rocher, a French traveler in Shoa, pretended to have discovered the tea plant there; very probably it is the ghat-shrub. Seventy years before Mohammet, Southern Arabia was conquered by the Christian Abyssinians. The worshippers of the fire and the Jews, not content with the Christian sway, united, and called Aly, the son-in-law and generalisimo of Mohammet, to their assistance, and so attained the expulsion of the Christians. Probably during this period, coffee and ghat were transplanted into Southern Arabia.

The planters of Sana carry their coffee in the husks to the markets of the Yemen, where the coffee-berry is separated from it by hand-mills formed of two small sand-stones. The greedy Arab is not likely to throw away any thing he paid for, and so he drinks the insipid infusion of the coffee husks (Arab kishr) which no body else has taken a fancy to yet, in any other part of the world. The Arabians grind on stones, or pound their coffee for want of iron mills, just as they wear sandals for want of skill to make shoes; but not with an idea of preserving, by these methods, the flavor of the coffee, which is quite erroneous.

The business time at the fair of Berbera lasts but five months; the beginning and the leaving it takes very near a month. The arrival of loaded camels during this time, may be set down at forty or forty-five thousand heads. As the Somalee camels are but of inferior kind, five camel loads must be here counted to a ton. The assortment of goods imported at the fair, from the inland, is about as follows:

25 per cent. in coffee (sent cleaned from the husks to the Berbera market); 35 per cent. in gums and resins; 40 per cent. in butter, sheep-tail fat, tallow, hides, ivory, and sundry articles.

The statement about the annual export of coffee from Berbera being 15,000 tons! is apparently a misprint in the pamphlet laying before me, and in Lieut. Wellstedt's travels, where it seems to be copied from, and is intended to be, probably, but 1,500 tons—a sum corresponding near enough to the above cyphers. The garrison and workpeople at the fortification of Aden, nearly ten thousand men, depend chiefly on Berbera and the Somalee country for their supply of sheep, goats, and horned cattle. Berbera, notwithstanding its daily intercouse with Aden, continues to be also a slave market.

I do not know what advantage for American trade, might arise from an Ambassade to a fanatic Wachabee chieftain, like Sheriff Hussein, of Aboo-Arrish, the present ruler of the Yemen, or to petty tyrants

like Sahlo-Sehlassee, Ras Oubee and Ras Aly, or to lawless and disunited savages like the Somalees. There is only one way to make such people subservient to our wishes—by following the steps of the John Company, the Handels-Madshappy, and the different fur-trade companies on our continent—which is to establish fortified comptoirs and factories, to draw as much as possible the commerce out of the reach of mischief, to procure shelters for vessels and traders, under cover of which, cargoes of goods might be collected or distributed with all leisure and security in the surrounding countries. Such points are at present, Aden, Singapore and Hongkong—such were, two hundred years ago, Bombay, Madras, Batavia, and numbers of forts in the then far west, grown up now to wealthy and populous cities. Such a point also might become the Island of Socotra, at the entrance of the Arabian Gulf, to the commerce of the United States; first to concentrate and protect the existing trade with Mocha, Muscate and Zanzuibar, then to extend it from the mouths of the Tudar, all over the Persian and Arabian Gulfs, and from Cape Guardafui (Ras Jar d'Afoon) to Zanzuibar and the adjacent islands, and finally, to provide Egypt directly with the spices, and drugs, and minerals of the east, in concurrence with Marseilles, which in a great measure monopolizes this trade in the Mediterranean, in the place of Alexandria of yore. This old channel will be re-opened ere long by some foreign power or other, as the Egyptians of our days have neither the intellect nor the spirit of enterprise to do it by themselves.

The sea around Socotra abounds with whales and fishes of all kinds. The soil is most part fertile; vegetables, dates, bananas and melons are plentiful. The aloe of the Island is celebrated, and the mountains contain, also, many kind of resins and gums, among them the Myrrha —a dragon-blood tree.

The English speak now ill of its climate and anchorage, but for Aden it would be English now, in spite of its defects.

Would such a place, like the Island of Socotra, on the high road from Europe to India, not be worth the inspection of some idle man of war, or the expenses of an Ambassador; and would it not be of more value to our country than the famous Dead Sea expedition?

HADJEE ABGAT EL GASSIHR.

MEMPHIS, March 30, 1850.

T. BUTLER KING'S REPORT ON THE GOLD MINES OF CALIFORNIA.

THE newspapers have, within the last few days, laid before the public the Report of the Hon. T. Butler King, on California. This Report has been looked for with great anxiety for sometime. Many grave and important questions, to the whole Union, are connected

with this country. Many rumors have got into circulation in relation to this gentleman's political movements, whilst there; and not a little interest has been felt to see or learn something of the pseudothyrial authority under which he is supposed to have acted; but that which caused this Report to be looked for with the greatest popular interest and anxiety, was the revelations it was expected to make in relation to the extent and value of the gold mines. It is a paper of so much importance, that we could have wished it to have reached us in the official garb of a public document; but under the existing arrangements of public printing at Washington, if we wait for that before we pay our respects to it, many of the most important questions it discusses may have been settled, and whatever we may have to say might become stale, if not unprofitable. We shall, therefore, assume that the Report, as published by the papers, is correct; as ample time, since its appearance in this form, has passed to allow the gentleman to whom it is attributed, to correct it, if erroneous in any of its parts, or disclaim it, if not his own. In doing so, however, we are left in uncertainty upon two preliminary points that would be interesting to know, though not, perhaps, essential; that is, the person to whom the Report is made, and the nature of the instructions under which he acted. These, we presume, will be satisfactorily explained, when the documents are officially published.

The first part of the Report is devoted to the consideration of the political affairs of California. As this has already attracted the attention of much abler and more competent persons in and out of Congress, we shall not touch it. The second gives us a very good *coup d'œil* of the climate, and agricultural capacities of the country, with perhaps some slight indication of a partiality that may have been very honestly felt by one who occupied the position of the Reporter.*

His facts no one will venture to question. The name of Thomas Butler King is a sufficient endorsement for them. But the most favorable view they give us of the agricultural capacities of California, makes it much inferior to the Mississippi valley. Indeed, he tells us, that when the population reaches 200,000, which it will this year, they will have to look to us: or, as he more largely expresses it: the Eastern States, for their bread and meat; and that the demand will increase with the population.

California has doubtless rich valleys and fertile plains, but they dwindle almost to a mere garden spot, when compared with the almost illimitable prairies and alluvial bottoms of this vast valley. The climate may be very pleasant to those who are habituated to it, or to those whose pursuits may not oblige them to be exposed to its vicisitudes; but when we read of their wet seasons, sending down torrents that submerge their principal cities; and their summer, or dry seasons, raising the thermometer to 100 or 115 degrees for months together, we feel a little doubt of its agreeableness. We con-

*By the way, this is, perhaps, as appropriate a place as any other, to say that we are gratified that the person selected for this mission was not a Western man. If some of the statements which he has presented had come from one of us, they would have doubtlessly been attributed to that tendency—to ROMANCE, for which many of our Eastern friends are ever ready to give us credit, and for which they, in their prudence, always give us, at least full allowance, in making up their balance sheet.

fess that a climate of such monotonous extremes, does not appear quite so inviting, if even as healthful, as one "more studious of change and fond of novelty." "The division of the year into two distinct seasons, dry and wet, impresses those who have been accustomed to the variable climate of the Atlantic States unfavorably." If this be the case with those from the Atlantic States, what effect must it have on those who have enjoyed the more agreeable climate of this valley? Mr. King further tells us that "a stranger arriving at San Francisco in summer, is annoyed by the cold winds and fogs, and pronounces the climate intolerable," which seems very probable, and a very good common-sense view of the subject. But if the stranger should have such an opinion of the climate in the summer, what would he have thought if so unfortunate as to arrive in winter? We are left to infer the answer to this, from negative testimony. Amongst the many things upon which praise is lavished in California, we hear but little said in favor of the *wet season, or winter.* We therefore infer that the stranger would have to be very keen sighted to see any thing agreeable in it; and if the summer should so annoy him as to make him pronounce the climate "intolerable," the winter would tax his organ of language, to suggest a word that would express his feelings.

With all Mr. King's evidently kind feeling for California, his regard for the truth does not permit him to deceive his fellow-citizens with false representations of the country. It is true that in running through the Report hastily, the impression is left, that he sustains to some extent the glowing descriptions of the climate and soil, that less competent, or perhaps less honest persons have heretofore endeavored to produce. Such descriptions or misrepesentations are as injurious to the country, as they are improper in those who make them, and it is to be regretted that the seeming character of Mr. King's Report gives them any countenance: such a country needs no such statements. California, in its position and its resources, must become one of the most important States in the Union. The golden fascinations with which she is bewildering the senses of almost the entire civilized world, will draw to her population as fast as she should desire. Of these a large portion will become permanent residents from choice, and without any lingering feeling of unkindness to a country to which they had been allured by false or interested statements.

The consideration of the Public Lands of California occupies a large part of Mr. King's Report. It appears that much of the territory south of thirty-nine degrees, adap ed to cultivation, is covered by claims, derived from the Spanish or Mexican authorities. As the discovery of the mines has taken place since the country has been in the possession of the United States, and as they lie mostly out of the range of the agricultural region, it is to be presumed that they are chiefly, in what may be considered the public domain. A portion of these in the south, particularly in the alluvion of the rivers, may be covered by some of those grants. If such be the case, a conflict of right, involving one of the highest questions of State, may arise between the individual proprietors and the United States. It is to be regretted that Mr. King gives us so little information on the subject. It is one that must be met and investigated. It will require an

enquiry into the action of the Spanish Government, its laws and usages in relation to mining property, and how far these were continued or modified by Mexico. And then will arise the question of the capability of the Government of the United States to succeed to, and exercise the rights or reservatives, if any, held by these Governments.

The Report informs us, that of most of these grants made by the Mexican government, the minerals and metals were reserved to the government. That is, we presume, that Mexico reserved to itself, in the exercise of the *Droit Regalien*, the right of Sovereignty, as it is generally recognised in Europe, over the mines of the country, after her separation from Spain. This right was probably the same as that claimed by Spain, before the revolution and separation of Mexico from that country. Under the Spanish government, the right to work a mine, had to be obtained by concession from the Sovereign; and no individual, or company, had a right to mine without such concession. There was a superior Council of Mines (*Tribunal de Minerea*) established at the city of Mexico; and in the Intendencies near the mines themselves, special councils, (Deputaciones de Mineria,) who appear to have been charged with a kind of surveillance, or general supervision of the operations. If the same laws and system were continued by the Mexican Government, it is evident that none of the grants made by that Government to individuals in California, would convey any mining interest, unless they contained a special provision to that effect. To those who are in a position to have access to the laws of Mexico as they existed at the time of these grants, and to the grants themselves, there should be no difficulty in arriving at a correct conclusion upon this question, at least so far as the claim rests upon Mexican authority. But let us suppose it proves that no such right to the mines, which the land conceded might contain, could be derived from the Mexican title direct, does it not insure to the party holding the land, in consequence of the rights which common usages under the common law have given in this country to such property. In other words, if a Board of Commissioners, appointed as recommended by Mr. King, to investigate these titles, should declare that any one or more of these had been regularly perfected under the Mexican Government, and consequently by the treaty of Guadaloupe Hidalgo, must be recognised by the Government of the United States, would not that recognition, under our usages and laws, carry with it the right to the mines, although such a right did not exist under the Mexican Government?

The Public Domain, or that part of the territory of California to which no private claim will or can be set up, Mr. King proposes to divide into two classes—agricultural and mineral; to survey and dispose of them in different manners. We confess there is no part of the Report that has given us less satisfaction than this. The beautiful and simple system which has been so thoroughly tested in these Western States for the subdivision and sale of the Public Lands, and which is now so well understood, should not be departed from, but under the most urgent necessity. The two principal, if not the only objections, to the introduction of this system into California, are, according to Mr. King, the irregularity in form and position of the private claims, and the necessity of irrigating cultivated lands there,

in consequence of which they must be so located as to be capable of being subjected to this process. The first objection is met by the example of Missouri, and several of the States occupying what was Louisiana under the French Government. If any one will take the trouble to look at a good map of the States, he will see there speckled, and, indeed, it might almost be said shingled over, in particular parts, by such claims. They presented, however, little difficulty in surveying and subdividing these States, and we can see no good reason why they should present more in California. As to irrigation, there may be some productions and some places that require it, but unless the country be extraordinarily supplied with streams and springs, much the largest portion of the land must be utterly beyond the reach of any such process. If "it is admitted," as the Report says, "that irrigation would be of very great importance, and necessarily increase the production of the soil in quantity and variety during the greater part of the dry season," we agree that "it should be encouraged by Government in the survey and disposition of the land as far as practicable," but this cannot possibly be done without sacrificing our present system of surveys.

But our objections to the views of the Report, in relation to the disposition and management of the mineral lands, are far more serious. That we may do full justice to the Honorable Reporter's plan, we are constrained to introduce the following lengthy extract:

"If it appears, from the preceding part of this Report, that it is sufficiently important to require laws suited to the condition and development of its wealth, we are necessarily brought to the consideration of the proper rules and regulations to be adopted for that purpose.

"The survey and sale of that section of country, under our present land system, or any other mode which may be devised, would, undoubtedly, cause very serious discontent among those who have gone, and all who may desire to go there to collect gold; and a most unnecessary and unavoidable inequality in the distribution of wealth among the purchasers.

"Sections and parts of sections of land, having no indications of gold on the surface, but possessing untold treasure in the bowels of the earth, might be sold for a mere trifle in comparison of their real value. Capitalists would overbid the daring, strong-armed day-laborer, who had braved the storms of Cape Horn, or the privations of a journey across the plains; and, by the power and combination of resources, would possess themselves of the most valuable mines which have been discovered, and employ skillful miners to examine the country, with as much secrecy as possible, for the purpose of making such discoveries as would enable them, in a great degree, to monopolize the most valuable portions of the country.

"It is much easier to imagine than describe the discontent (perhaps disorder) which would spring up among a hundred thousand freemen, deprived of the privilege of an equal enjoyment of, or participation in, what they have been in the habit of regarding as the common property of the people of the whole Union.

"It is, perhaps, more than doubtful whether such laws could be enforced. The employment of troops for that purpose would not only be odious, but ineffectual: they would be more likely to set an exam-

ple of insubordination, by desertion, than to compel obedience in others.

"The people would unite with them in producing anarchy and confusion. No system, therefore, which is not in accordance with the interests of the people, can be carried into successful operation. It is always fortunate, when laws can be so framed as to harmonize those interests with the policy and duty of the government. It is believed that may be accomplished in this case.

"While every American citizen in the mines is aware that he is on government property, and would consider any attempt to drive him away as an act of oppression, he at the same time feels that something is due from him for the privileges he enjoys, and he would willingly pay a reasonable sum to have those privileges defined, and to be protected in the enjoyment of them.

"The gold in the rivers, the dry diggings, and the ravines, is accessible to any man who has the strength to use a pan or washer, a spade and pickaxe.

"The employment of machinery may, perhaps, facilitate its collection; but it is not essential. Every man is master of his own movements. The case will be very different with the vein mines which yet remain in the rock. To work them successfully, will require machinery, with horse or steam power, involving an expenditure of capital in proportion to the extent of the operations.

"No prudent man will make such investments until his rights and privileges shall have been clearly defined by law. In the absence of all legal regulation, if a man were to discover a vein mine, and incur the expense of erecting machinery to work it, any other person, citizen or foreigner, might construct an establishment alongside of him —deprive him of his discovery, and destroy the value of his property. Hence, it will be perceived, that any law prescribing the privileges and duties of miners, should be so framed as to secure the rights of all.

"There is some fertile soil in the gold region—beautiful valleys and rich hill-sides—which, under circumstances favorable to agriculture, would undoubtedly be valuable for that purpose; but at present, and as long as the collection of gold shall continue to reward labor so much more abundantly than the cultivation of the soil, the important matter to be considered is the proper mode of disposing of the metallic wealth of the country."

Having thus given us his reasons, the Reporter proceeds to give us his plan as follows:

"The first step, in my opinion, should be to reserve the entire region where gold is found, from the operation of the preemption laws, and from sale, so that it may be now regarded as the *common treasure* of the American people, and hereafter as a rich inheritance to their posterity. Then provide for the appointment of a commissioner of the mines, and a sufficient number of assistant commissioners to carry the law into effect. Let the office of the commissioner be established at some point convenient to the mines, say Sacramento city, and the offices of his assistants on the principal rivers, and in the most productive districts. Provide that any and every American citizen, on application at the office of the commissioner, or any of his assistants,

and by paying one ounce, or $16, or such sum as may be considered just and proper, shall be entitled to receive a license or permit to dig any where in the territory for one year. Provide, also, that any one who shall *discover*, or purchase of the discoverer, a vein mine; shall be entitled to work it, to a certain extent, under proper regulations, on paying to the commissioner such per cent. on the proceeds of the mine as may be a suitable tax on the privileges granted. It will be necessary, also, to allow the miner to cut and use such timber, and other building materials as his business requires; and also, to allow those who work under permits the privilege of erecting cabins for shelter through the winter. Authorise the commissioner to lay out sites for towns in convenient situations to the mines, and offer the lots for sale, reserving the metals and mineral, so that those who make mining a permanent pursuit, may accumulate around them, the comforts and enjoyments of civilized life. Let those who desire to cultivate gardens or farm lots be accommodated. It will be necessary also, to authorise the sale of timber and other materials for building and other purposes. There may be other suggestions which do not now occur to me, but no doubt will to those who may be charged with the preparation of any measure which may be brought forward on this subject."

We regret to differ so thoroughly as we do with Mr. King upon this matter. It is a subject that has long attracted our attention and consideration; our views have not been hastily made up.

We are not prepared, however, to go into the examination of Mr. King's plan, until we have discussed some preliminary questions that lay at the very foundation of it. It is evident that Mr. King takes it for granted, that the Government of the United States has a right to adopt some such plan as his, which recognises the mines of the United States, or at least those of the Public Lands, as property of a special character, over which, the Government of the Union has a right to exercise its authority, something after the manner of the sovereigns of Europe. Does such an authority exist in the United States Government? It may be said that Mexico exercised this authority over California; and that she conveyed all her authority with the territory. Granted: but this does not confer any authority on the United States, unless it is conferred by the constitution, directly or indirectly. When Spain transferred her sovereignty over Florida to the United States, she conveyed her authority to make the Catholic the state religion of the territory. But it did not follow that the Government of the United States acquired the right which Spain enjoyed in this matter.

It is conceded, that whilst California continues a territory, the United States has sovereign authority over it; but that sovereignty itself is the creature of a compact amongst other sovereigns, she can therefore only exercise so much authority as may have been granted in that compact. She may perhaps be allowed by the sovereign States who created her, to act tacitly as an agent for them, to an extent beyond the strict letter of her powers, where they are all mutually interested. But can she, under such authority, fix a system irrevocably upon California; and which may be, or supposed to be, injurious to her interests when she becomes herself one of the sovereign States? It will not

do to meet the question by urging the right of the United States as the proprietor of the land, to dispose of it as she thinks best. Such an argument would be an abandonment of her special right in the mines, independent of the land, and tell at once, with crushing effect against any claim the United States Government might set up to the mines on the lands held in this territory, under grants from Mexico. When California becomes one of the sovereign States, she may demand that those arrangements injurious to her interests, or derogatory of her equality, shall be repealed. The Government of the United States will then have ceased to be the sovereign over these lands. She may own them, it is true; but that gives her no rights beyond that of an individual citizen over them. The eminent domain—the great attribute of sovereignty—will have passed to California. It is true, also, that she may reserve by compact with the nascent State, the authority to manage or dispose of these mines, provided the latter is willing to confer this authority. But if no such compact be entered into, can the United States Government exercise any other authority over these mineral lands than she can over the agricultural ones? In other words, having repudiated the doctrine that the lands, and the mines contained in them, are one and inseparable, can she attempt, or expect to exercise the authority that appertains to the sovereign over the mines, after that sovereignty has ceased to exist? If, then, the United States Government shall establish a system for the management of these mines, through the authority it might claim as sovereign, of course it would only be binding as long as she exercised this authority, or should be tolerated or approved by the authority that succeeds her—that is, the State.

But it may be asserted that she could accomplish her object indirectly. She could retain the proprietary right in the lands, and under it, lease out the mines from year to year, or for other periods, with conditions that would in fact place her in the same position over them as if she exercised the sovereign authority. Would such a course be just to California? Would it be prudent for the Government of the United States to exercise authority by such means, particularly when it might bring her in conflict with the authority of a sovereign State?

Mr. King tells us that "the gold region of California is between four and five hundred miles long, and from forty to fifty miles broad." One of the engagements, we believe, entered into by all the new States in which there are public lands, is, that the States shall never place a tax upon these lands whilst they continue the property of the Government of the United States. Would it be just to California to deprive her forever of the right to tax this immense territory, and thus throw the burden of the expenses of the State government on the other portions? With the examples of the action of the United States Government in relation to the mineral lands in Missouri, Illinois, Wisconsin, &c., it is not likely she would long hesitate in demanding relief from this policy. Nor do we believe it would be refused. The gold region of California would then be in exactly the same position that the mineral regions of Missouri, Illinois, Wisconsin, Michigan, &c., are at this moment.

There is no government of any importance, we believe, in the civilized world, except ours, that does not reserve its sovereignty in some form, over at least its gold and silver mines. Great Britain, even, does this. If the General Government of the United States should persist in an attempt to exercise a control over the California Gold Mines, not satisfactory to California through her right to the lands alone, might not the latter, sustained as she would be by the practice of almost every other sovereignty, assert and claim her right over them? What then would be the value of this great reservative for "the whole American people," which Mr, King contemplates so complacently? Should the older States complain, California might very quietly ask Virginia, North Carolina, Georgia, and Alabama, if they are willing to give up their gold mines to the Government of the Union for the common good. Or, she might put the same question to Pennsylvania and Maryland as to their coal and iron mines. Or she might be presumptuous enough to ask the General Government if she was quite sure she could constitutionally exercise such authority as she sought over these mines, even if California would permit her. These are questions, or abstractions if you please, that ought to be discussed and settled before adopting Mr. King's, or any other such plan, for the management of the mines.

We see, therefore, that there are serious difficulties to be met and removed, before Mr. King's plan could be safely ventured upon, if it were otherwise unobjectionable. But this is far from being the case. His plan, in all its important details, is the same as that attempted with the lead mines of the Mississippi Valley. That, it is well known, was a signal failure. There is no reason, that we can perceive, to justify the hope that Mr. King's plan will be more successful in California. It is true, there are some slight differences in the details, but they will not, in our opinion, effect the result.

One of the most important differences is the requirement of the payment of a small sum—an ounce of gold—per annum for a permit. But with all due deference, we do not believe this is nearly so likely to be collected as was the rent, as originally arranged in our lead mines. In the latter case, the Government threw upon the smelter the responsibility of collecting and paying over the rent; and, as long as the smelting-houses were established on Public Land, and by special permission, it was their interest to deal fairly with the Government. In California, the rent is to be collected from each individual miner; to do which, from some two hundred to three hundred thousand miners, would require a small army of collectors. Mr. King deceives himself in believing that those who pay will aid in forcing payment of delinquents. All such taxes are odious to our people; few will pay it voluntarily, and still fewer will expose themselves to the imputation of becoming informers upon their fellow-laborers. A very different feeling must pervade the miners of California, from what has always exhibited itself in the same class in the Mississippi Valley, if they do not look upon such a tax as is proposed by Mr. King, however small it may appear, as an unwarrantable extortion. Here they were in the habit of thinking that there was not any good cause for making their labor the subject of special taxation.

The idea of collecting a revenue from the mines, is a serious political error. The value of the mines to a nation, or at least to a government like ours, does not lie in the amount of money that can be wrung from the operatives in them, but in the material they furnish for the economical, manufacturing and commercial prosperity of the country. There is no good reason why a miner, or one or two particular kind of miners, should have special taxes imposed upon them, merely for the sake of revenues. If, as is the case in so many of the European governments, we had a regular system of mining and engineering, organized under the control and direction of the government, and the miners were a special class, and all the mines of the country reserved as public property, there might be some reason for this class of taxation and legislation. The miners would then see some cause for the special attention paid them and their profession by the government. Few of our own citizens are raised as regular and professional miners. They may be mechanics one year, farmers the next, and miners the next; and they cannot see any difference in their position, or any special favors they have conferred npon them during the latter year, to justify the Government in exacting more of them, either in money or responsibility then, than in the two preceding years. They change their pursuits to better their condition, a step that all good governments ought rather to encourage, than oppose. They do not ask any assurance of success from the Government; they take upon themselves the hazard of the change. If they are unfortunate, they look only to their own future exertions to retrieve their losses; if they are successful, they see no good reason why their good fortune should be a special object of revenue to government.

Nor is it a very easy matter to convince one of our plain common sense citizens, that there are strong and sufficient reasons why he should not be allowed to own a mine, whether of iron, lead, copper, or gold, as he owns a farm, a mill, or manufacturing establishment. And, as might be expected, he has good reasons to sustain him, he likes to feel that the labor he bestows—the improvements he makes upon whatever he engages in, are for the benefit of himself and family. That every year is adding new comforts and additional conveniences to his homestead. It is such men that make the most valuable citizens, and it is such as these that should be encouraged to become the mining population of California. But this will never be accomplished by the plan proposed by Mr. King. In fact, we can scarcely consider his plan in any other light than an encouragement to vagrancy. It is true, he speaks of "authorising the Commission to lay out sites for towns in convenient situations," but such towns we opine will be little better or more permanent under this arrangement for mining, than one of the Indian villages on our western plains. It will be well if they do not exhibit more scenes of lawless bloodshed, and savage exitement.

If, in any respectable community, one man were to tell another, that for fifteen or twenty dollars he may have the privilege of opening a gambling establishment in his house for six or twelve months, and keep all he could make by the operation, very strong suspicions would be excited among those who knew it, as to his intelligence or his honesty. But if the Government of the United States should say to its citizens,

leave your wives and children, your fathers and mothers, brothers, sisters, friends, and everything that can render life desirable and comfortable, and travel away some two or three thousand miles over mountains, plains, and deserts, to our mines in California, and we will let you dig a year and have all the gold you can get, by paying us twenty dollars ; it would appear all right and proper, at least in the eyes of some men. We confess we cannot see it in the same light. We cannot perceive any justification for encouraging this species of gambling. We should like to see the Government pursue a course that would make as good citizens of the miner as the farmer—of the merchant as the mechanic. Let them find a home in the mines like that they have left behind them. Let them feel that in going into this new business they are not looked upon as adventurers ready to leave it as soon as they have accumulated enough to make them comfortable elsewhere.

But it is more than probable that it is of very little importance what course we should like to see the Government take in relation to these mines. Governments learn very slowly, even by experience, and it is not unusual for them to study the same lesson over several times before they understand it. This, we presume, will be the case in this instance. With some slight modification, an old lead mine system will be adopted for the Gold Mines of California. Agents or commissioners, if you please, will be sent out ; offices and books opened ; permits granted, and all go along smoothly enough for a while, but as we do not pretend to the spirit of prophecy, we shall not attempt to say how long, nor with what benefit to the country, or those citizens whose good or evil future may lead them there.

There is one recommendation made by Mr. King, which we hope will be very carefully considered before it is adopted. It is the prohibition of foreigners from mining. However plausible it may appear, we conceive it a question of extremely doubtful propriety. In considering it, we must not confine our views to the benefits the individuals themselves are to derive from it. The immense increase that these mines are likely to produce in a few years in the circulating medium of the country, must have an effect upon almost every pursuit, and every species of property. Mr. King estimates the produce of the year 1848 and '49, at forty millions of dollars ; and that of the present, at fifty millions. Thus, in little more than two years, if all of this could have been forced to this country, we should have had ninety millions of dollars added to our circulation, a sum nearly equal, in all probability, to the amount of our metalic currency at the time these mines were discovered. Such an inundation of the precious metals must have had an effect—and a very striking one—for good or evil, upon the country.

Fortunately, the fifteen thousand Chilians and Mexicans drew off a very large portion of the last two years' produce ; but the Hon. Reporter gives no hope of any such safety-valve for the present year. The prospect of gold flowing in upon us at this rate, in an uninterrupted stream, is more alarming than gratifying. We have the history of Spain before our eyes, and the rapid decline she underwent, from a similar cause It is wise to flatter ourselves that we have something in the character of our people and government, to which we may trust with blind confidence, to protect ourselves against the

results that the same cause produced in that country. There was no nation in Europe more intelligent, enterprising, and endowed with all the attributes that could give a people confidence in themselves, than the Spaniards when the torent of precious metals from the mines of the colony first began to pour in upon them.

Such a plethora to the body politic, we fear, is as dangerous as a sanguineous one to the human system. In such a state, we may be stricken down at a moment of apparently fullest health, and resuscitate palsied forever after. We would,therefore,hesitate,and reflect very seriously before we took any steps to force this flood of gold entirely upon ourselves.

We confess ourselves utterly incompetent to grapple with this important question. It would require the genius of an Adam Smith to do it justice. But some of the effects that have already occurred, may, like feathers in an approaching gale, show which way the wind is setting. The effect that California has had upon our lead trade already, is one of the most striking circumstances we have yet seen. It is probable that the produce of the lead mines of this State and the Upper Mississippi will be from twenty to twenty-five millions of pounds less this year than they were three years ago. This decrease is almost exclusively due to the emigration of our miners to the gold mines of California. Lead is now worth five cents a pound in New Orleans, a higher price, we believe, than it has borne for fifteen or twenty years, at this season. Twenty millions of pounds—estimating the deficiency at that—at five cents, is equivalent to one million of dollars. That amount we shall have to import from Europe for our manufactures, instead of supplying them, as heretofore, from our own mines. The humber of miners whose absence will have produced this deficiency ,will not exceed a thousand. Let us suppose that they will make an average of a thousand dollars apiece; this gives a million of dollars of gold, as an offset for the same amount deficient in lead. But it does not, by any means, compensate the country for the danger it incurs in meeting the competition of foreign countries in the manufactures of lead, or, of which lead is the most important part; nor the losses that may be sustained by such competition.

Would it not then have been much better for the general interest of the country if we could have kept these thousand miners at the lead mines, and had their place supplied by a similar number for the lead mines of Derbyshire, Devon and Cornwal? We would have thrown the deficiency upon England, and thus given the advantage to our own manufactures and the stimulus of the increase of price to our own mines. The only seeming advantage that England would have derived would have been the million of gold produced. But this would have lessened to that extent the amount with which we are threatened, and throw some of the plethora upon her.

This may be the most striking evidence we have yet had of the effect of the California mines, upon the established persuits of the country. But it cannot be the only one, there must be many trades that have been, or soon will be also affected. The increased price of almost everything, including labor, that will be produced by such a sudden and great increase, in the capital of the country, as Mr. King anticipates, must seriously endanger and perhaps prostrate many of our manufacturing establishments, that now find it difficult, to main-

tain themselves against foreign competition. Would it not be well then, if it were practicable to throw some of the gold upon these foreign countries, and make them feel some of the effects of the plethora too? The only way we could do this, would be to open the door to them, and encourage them to come and dig with us. It will not answer the same purpose to send over our people to dig it for them. We therefore doubt—seriously doubt—the propriety of adopting Mr. King's advice to prohibit foreigners, from working our gold mines at present, at least.

We fear the public will be very considerably disappointed in the revelations they anticipated from this Report in relation to the character of the Gold Mines. Mr. King gives us little else than what had already reached us through letter writers and the California newspapers. But this is no fault of his. He was not sent there, we presume, to make a geological or statistical Report on the country. He may have been instructed to collect some little information on these subjects to throw before the eyes of the people as a kind of mist to prevent them from seeing too distinctly, exactly what he was sent for. We do not, by any means, intend to say that this was the case, for we know nothing about it, but it is very certain from the Report, that Mr. King was not appointed to make a geological and metallurgical exploration of the country, as a primary object, for the benefit of the anxious millions whose thoughts and hopes are turned to the country. But neither the Government nor Mr. King should be blamed for this. The people often pick up very little men and make them great, from merely political or party considerations. Is the Government to be blamed for following the example? We should rather be thankful, that in doing so they take care to make such creditable selections as they have done in this instance. It is more than probable that for the real purposes for which Mr. King was sent to California, no better appointment could have been made. We must not expect every man in our country to be a Franklin or a Humboldt. Besides, the people expect too much, generally, of the public servants. They elect them as politicians, and they ought not to be astonished if they consider politics and party much more important than any of the mere common-place practical questions, in which the people at large may have an interest. No political capital can be made out of such questions. The people cannot be divided into political parties, upon the extent or geological character of the mines, or the best metallurgic process for making them produce. It is no business, therefore, of theirs: they are politicians, the people elected them as such, and when a subject presents itself that cannot be tortured into a political one, the people must take care of it themselves. If they want to know anything of a practical or scientific character, beyond what the newspapers or letter writers give, that may enable them to come to a proper conclusion as to the propriety of becoming one of the "diggers," and making the necessary preparations therefor; or, if intending to stay at home, they want reliable information in relation to the probable extent of these mines, that they may have a solid foundation to reason upon the effects they are to have on the future destinies of the country—why we say, if the people want this sort of information, or any other out of which political capital cannot be made, they must not look to the men they have made great for political considerationsto furnish it.

HENRY KING.

HEMP CULTURE.

Upon a reference to the "*Annual review of the trade and commerce of St. Louis for the year* 1849," as compiled and published by *Messrs. "Chambers & Knapp, for the Missouri Republican,"* it appears that the staple commercial products of the State of Missouri, taking the receipts of St. Louis as the criterion, may be set down as wheat, lead, flour, hemp, and tobacco; (leaf and manufactured;) these articles taking precedence (regarding value) in the order named.

I assume that at least one-half of the wheat and flour is the product of Illinois and Iowa, and seven-eighths of the lead is of the export of Illinois.

Hemp, then, stands forth pre-eminently as the grand staple of Missouri; its productive value in 1849 being placed at one million eighteen thousand three hundred and eighty dollars, or nearly double that of tobacco, in its various forms.

It should seem, therefore, that it behooved the farmers of our State to render themselves thoroughly familiar with the kind of soil, and method of preparing the earth for the growing of this plant to advantage.

In Art. VI, No. VIII, Vol. 1, of your valuable "Journal," my endeavors were put forth to effect this object,, but at the time of writing that paper, I had not as full and tested an experience regarding the growing of hemp upon *old ground*, as has since fallen to my lot.

That an old field of the right stripe, [I mean such a field as naturally produced the growth mentioned in the article referred to above —elm, hackberry, losust, and walnut, with an undergrowth of papaw and hazel,] should be refitted for the growth and production of a prime article of hemp, it is indispensable that it be laid down in clover. This should be ploughed in during the fall of the second year, and permitted to reproduce itself during the next season. In the autumn of the third year, it should again be turned over from twelve to fourteen inches deep. Such ploughing will expose to the action of the atmosphere a subsoil that has, under an ordinary course of tillage, never before seen daylight; and although it may look rather mulattoish at first, the frosts of the ensuing winter, with its consequent exposure, will so far change its appearance and quality by spring, that the sub and supra soil, upon their amalgamation, consequent, and in process of breaking it up, across, for sowing, will present a light and lively appearance, gratifying to the farmer who may adopt this course.

In the article alluded to, I said that "soil once rich, will grow a first-rate article of hemp, after being treated in this manner." I now give it as fact, that an old field of twenty acres, which was first cleared and planted in corn in 1811, having had this course of regeneration pursued with it, produced, in 1849, thirteen thousand, seven hundred

and ten pounds of prime hemp, (13,710 lbs.,) of a beautiful color and fine weight.*

Hemp grown upon new ground, ever so well and finely prepared for the reception and growth of the seed, generally produces a light lint the first year; whereas, a field—an old field—having experienced the process above set forth, will grow a heavy prime article the first year, and improve, as it produces hemp, year after year, until the stalks get so large that it will be necessary to plant it in corn or tobacco to impoverish it.

This may be accounted for from the fact that it is never ploughed during the heat of summer; but is shaded by the hemp, which it is well known, will stand a drought better than any other crop.

The plain fact is, that our Missouri farmers too often (or rather, too many of them) *scratch* their ground over and over, year after year; all the fertility of the soil yet laying dormant, and, of course, useless, below the three or four inches of surface thus disturbed; having never been encroached upon for use—*buried treasure*, for the use of future generations. Even if it were not proposed to grow hemp upon such old fields, should these agitators of the surface think proper to go a little farther "*in medias res*," and draw upon the subsoil, in the manner hitherto indicated, their labor would be ten-foldly rewarded in the increased production on corn or wheat.

To distort (for the nonce) the familiar couplet of Pope—

> "This shallow ploughing is a foolish thing:
> "Plough deep, or taste not of the aurite spring."

J. T. CLEVELAND.

HAZEL RIDGE, Mo., March 26, 1850.

COMMERCIAL STATISTICS.

HOME AND FOREIGN COMMERCE

Statement of the commerce and navigation of the United States with foreign countries, for the fiscal year of 1849, taken from the official Report of the Secretary of the Treasury, laid before the Senate on the 26th February, 1850.

From the Commercial Review.

Statement of the total value of goods, wares and merchandise, imported in the United States, in American and foreign vessels, during the year ending June 30, 1849.

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*I would append the cir ificate of Mr James McLoney, an experienced dealer in, and manufacturer of hemp, for many years, at Glasgow, that my own judgment might not rest unsupported, did I consider it necessary. Suffice it to say hat he considers it a "prime article of hemp," and so expresses himself.

	In American vessels.	*In foreign vessels.*	*Total.*
Paying duties,	$103,293,220	22,186,554	125,479,774
Free duty,	17,088,932	5,288,733	22,377,665
Total,	$120,382,152	27,476,287	147,857,439

Statement of the total commerce of the United States, from the 1st of July, 1848, to 30th June, 1849.

Value of exports.

Domestic produce—	
In American vessels,	$ 91,363,303
In foreign vessels,	41,304,647
Total,	$132,666,955
Foreign produce—	
In American vessels,	$ 9,169,815
In foreign vessels,	3,919,050
Total,	$ 13,088,865
Total of American and foreign produce,	$145,756,820

Value of imports.

In American vessels,	$120,382,152
In foreign vessels,	27,475,287
Total,	$147,857,439

Summary statement of the value of domestic exports during the year ending June 30, 1849.

THE SEA.

Dried fish, or cod-fisheries,	$ 419,092
Pickled fish, or river fisheries,	93,085
Whale and other fish oil,	965,597
Spermaceti oil,	582,763
Whalebone,	337,714
Sperm candles,	159,403
Total,	$2,547,654

THE FOREST.

Skins and furs,	$ 656,228
Ginseng,	182,966
Staves, shingles, boats, timber,	1,776,794
Other lumber,	60,344
Masts and spars,	87,720
Oak bark and other dye,	95,392
All manufactures of wood,	1,697,828
Naval stores, tar, pitch, rosin and turpentine,	845,164
Ashes, pot and pearl,	515,603
Total,	$5,917,994

AGRICULTURE.

Beef, tallow, hides, horned cattle,	$ 2,058,358
Butter and cheese,	1,654,157
Pork (pickled), bacon, lard and live hogs,	9,245,885
Horses and mules,	96,982
Sheep,	16,305
Wool,	81,015
Wheat,	1,756,848
Flour,	11,280,582
Indian Corn,	7,966,369
Indian meal,	1,169,025
Rye meal,	218,248
Rye, oats and other small grain and pulse,	139,793
Biscuit or ship bread,	364,318
Potatoes,	83,313
Apples,	93,904
Rice,	2,569,362
Tobacco,	5,804,207
Cotton,	66,396,967
Hemp,	8,458
Flax seed,	4
Hops,	29,123
Brown sugar,	24,906
Indigo,	49
Total,	$111,059,378

MANUFACTORIES.

Soap and tallow candles,	$ 627,280
Leather, boots and shoes,	151,774
Household furniture,	237,342
Coaches and other carriages,	95,923
Hats,	64,963
Saddlery,	37,276
Wax,	121,720
Spirits from grain,	67,129
Beer, ale, porter and cider,	51,320
Snuff and tobacco,	613,044
Linseed oil and spirits turpentine,	148,056
Cordage,	41,636
Iron, pig, bar and nails,	149,358
Castings	60,176
All manufactory of iron,	886,639
Spirits from molasses,	288,452
Sugar, refined,	129,001
Chocolate,	1,941
Gunpowder,	131,297
Copper and brass,	66,203
Medical drugs,	220,894
Cotton printed and colored,	466,574
" white,	3,955,117
" nankeen,	3,203

Cotton twist, yarn and thread,	92,555
All other manufactures of cotton,	415,680
Flax and hemp cloth and thread,	1,009
Bags and all manufactures of do.,	4,549
Wearing apparel,	75,945
Combs and buttons,	38,136
Brushes,	2,924
Billiard tables,	701
Umbrellas and parasols,	5,800
Leather and morocco skins (not sold per lb.),	9,427
Fire engines and apparatus,	458
Printing presses and type,	28,031
Musical instruments,	23,713
Books and maps,	94,427
Paper and stationery,	86,827
Paints and varnish,	55,145
Vinegar,	14,036
Earthenware and stoneware,	10,632
Manufactured glass,	101,419
" tin,	13,143
" pewter and lead,	13,196
" marble and stone,	20,281
" gold and silver and gold leaf,	4,502
Gold and silver coin,	956,874
Artificial flowers and jewelry,	8,557
Molasses,	7,442
Trunks,	5,099
Brick and lime,	8,071
Salt,	82,972
Total,	$10,798,473
Coal,	$ 40,396
Lead,	30,198
Ice,	95,027
Total,	$165,621

Articles not enumerated.

Manufactured,	$1,408,278
Other articles,	769,557
Total,	$2,177,835
Sum total value of domestic exports,	$132,666,955

Summary statement of the goods, wares and merchandise of the growth, produce and manufacture of foreign countries, exported from the United States, for the year ending 30th June, 1849.

FREE OF DUTIES.

Bullion—gold,	$ 6,500
Specie—gold,	1,008,850

Specie silver,	3,432,415
Copper—sheathing plates,	59,846
" ore	625
Cotton—manufactured, 146,858 lbs.,	8,151

PAYING DUTIES AD VALOREM.

Manufactured wool,	$201,404
" cotton,	567,082
Copper and manufactured copper,	65,326
Lead, (pig, bar, sheet and old), 253,373 lbs.,	11,401
Manufactured lead,	100
Steel (cast, shear, and German),	54,586
" all other,	558
Manufactured iron, and iron and steel,	109,439
Unmanufactured wool, 46,792 lbs.,	6,891

Cotton exported during the year ending June 30, 1849.

	Sea Island.	*Other.*	*Value.*
Russia, lbs.,	-	lbs10,650,631	$ 852,198
Sweden & Norway,	6,145	7,024,160	482,475
Denmark,		4,779	302
Hanse Towns,		13,844,494	862,536
Holland,		11,887,386	768,798
Belgium,		28,113,309	1,347,660
England,	9,178,563	787,490,911	44,772,124
Scotland,	535,111	38,171,773	2,423,590
Ireland,		3,968,547	249,085
Gibralter,		5,725,812	442,947
Canada,		94,357	5,710
British American colonies,		2,747	336
French Atlantic,	2,249,440	142,232,509	9,746,616
French Mediterranean,	6,858,283	142,232,509	439,097
Spain do.,		23,285,804	1,527,720
Cuba,		1,584,784	103,913
Portugal,		240,895	17,885
Italy,		10,604,462	629,821
Sardinia,		6,056,707	342,905
Trieste and other Austrian ports,		13,279,484	844,796
Mexico,		2,207,904	150,988
Central Republic of America,		534,721	45,085
China,		760,861	40,281
Total,	11,969,250	1,014,633,010	$66,396,967

Comparative statement of exports and imports of several articles.

EXPORTS.

	Quantity.	*Value.*
Cotton, unmanufactured,	1,026,602,269	$66,396,967
" manufactured,		4,933,129
Wool, unmanufactured,	159,935	81,015

Iron, pig, - - - tons,	83	149,358
" bar, - - -	261	
" nails, - - - lbs.	3,136,958	
" castings, - -		60,175
Manufacture of iron and iron and steel;		886,639

Bullion and specie.

Specie—gold and silver, - - - -	956,874

IMPORTS.

Cotton, unmanufactured, -	157,276	$ 8,255
" manufactured, - -		15,754,841
Wool, unmanufactured, -	17,869,022	1,177,347
" manufactured, - -		13,211,548
Iron, pig, bar, nails, - -		13,832,023
Steel, - - - -		1,227,138

Bullion and specie.

	Gold.	*Silver.*
Bullion, - - -	$ 297,570	$ 154,680
Specie—gold and silver, - -	3,771,077	2,427,905

Statement showing the total value of exports during the year ending June 30th. 1849

	In American vessels.	*In Foreign vessels.*	*To each country.*
Russia, -	$ 864,621	$ 72,936	$ 937,557
Prussia, -	6,944	27,759	34,703
Sweden & Norway,	117,132	608,149	725,281
Swedish West Indies,	88,044	7,083	95,128
Denmark, -	175	54,963	55,138
Danish West Indies,	678,578	48,619	727,197
Hanse Towns, -	738,125	1,972,123	2,710,248
Hanover, -		8,496	8,496
Holland, -	1,435,943	719,385	2,155,328
Dutch East Indies,	257,188	23,635	280,823
Dutch West Indies,	302,409	14,657	317,066
Dutch Guiana,	100,966	3,017	104,013
Belgium, -	2,012,636	430,428	2,443,064
England, -	44,519,160	24,642,832	69,161,992
Scotland; -	1,880,960	1,668,999	3,549,960
Ireland, -	2,272,740	1,643,602	3,916,342
Gibralter, -	678,335	45,484	723,819
Malta, - -	28,119	23,114	51,233
British East Indies,	332,962		332,962
Cape of Good Hope,	94,422		94,422
Mauritius, -	7,884	13,247	21,731
Honduras, -	191,347		191,347
British Guiana, -	604,681	57,634	662,315
British West Indies,	3,196,105	739,729	3,935,834
Canada, - -	1,254,145	1,066,178	2,320,323
Brit. Am. colonies,	916,851	2,694,932	3,611,783
Fr. on the Atlantic,	10,069,418	1,577,194	11,646,612

France on the Mediterranean,	716,834	130,313	877,147
French West Indies,	121,321	59,410	180,731
Miquelon and French Fisheries, -	20,370		20,370
French Guiana, -	44,504	1,657	46,161
Bourbon -	9,473		9,473
Spain on the Atlantic, -	157,812	12,259	169,071
Spain on the Mediterranean, -	161,351	1,458,072	1,619,423
Teneriffe and other Canaries, -	17,810		17,840
Manilla and Phillipine Islands, -	137,868		137,868
Cuba, - -	4,564,651	76,494	4,641,145
Other Spanish West Indies, - -	512,693	10,599	523,292
Portugal, -	105,614	64,107	169,021
Madeira, - -	80,588	37,290	117,878
Fayal and other Azores, - -	14,204		14,204
Cape de Verd Isles,	62,647		62,647
Italy, - -	640,007	171,443	811,459
Sicily, - -	16,459	7,900	24,359
Sardinia, - -	320,310	140,640	460,950
Tuscany, - -	26,800	3,276	30,076
Trieste and other Austrian ports, -	727,105	215,384	942,489
Turkey, Levant &c.,	182,410	11,466	193,876
Hayti, - -	485,082	47,495	532,577
Mexico, - -	955,112	92,877	1,047,999
Central Republic of America, -	58,739	53,741	112,480
New Granada, -	214,258	30,202	244,460
Venezuela, - -	415,792	15,629	431,421
Brazil, - -	2,701,120	137,260	2,838,380
Cisplatine Republic,	105,113	29,525	134,638
Argentine Republic,	435,714	159,804	595,518
Chili, - -	1,641,047	81,410	1,722,457
Peru, - -	93,195		93,195
China. - -	1,460,945		1,460,945
West Indies generally,	101,219	5,110	106,329
South America, "	85,215		85,215
Europe, "		18,588	18,588
Asia, "	344,436		344,436
Africa, "	609,871	66,898	676,769
South seas and Pacific ocean, - -	336,660		336,660
Total, - -	$91,363,308	41,303,647	132,666,955

SOCIAL PROGRESS AND REFORM.

Legitimate and rational progression in society is a necessary consequence of a proper intellectual and moral enlightenment; and when a nation or community does not advance in all that is truly great, comprehensive and liberal, tending to the common good of all, it may be affirmed that the tendencies, educational, religious, moral and social of that nation or community are radically wrong.

It is the nature of error to be conservative, to wish things to remain as they are, lest discussion, change and progress should light the torch of truth, and thus expose the hideous form of its depravity, degradation and wrong. Hence it is, that a wrong principle once incorporated into the frame-work of society, in the form of a law, usage, or custom, under which individuals have acquired vested rights and peculiar privileges, both as it regards persons and property—becomes apparently more fixed and firm with the advance of time, until the burthen is rendered intolerable, and human nature convulsed and writhing in agony, with one mighty effort breaks the web that bound it, or falls back again in deeper or more sullen dispondency. For the truth of this proposition we have only to revert to the annals of the past, darkened by crimes, civil convulsions and anarchy.

There, we behold through the dim vista of ages those who under the garb of vested rights have trampled upon the ignorant, the weak and unoffending, scorning the names of truth, virtue and justice, and, by the law of night appropriating not only the bounties of nature but the labor of their fellow man to their own individual purposes.

To the weak and finite vision a retrospection of the past is not calculated to inspire hope and confidence in the future. But to the calm and penetrating eye of philosophy, directed by the light of christian truth there is harmony, beauty, and hope in the picture—hope in the mysterious, untried and undeveloped future. For every rencounter of error with truth, of wrong against right, of the strong against the weak, the good, though for the time beaten to the earth, is still triumphant in ultimate victory—truth has yet found utterance though not perhaps in words but in action, and a truth once proclaimed is a legacy to mankind, bequeathed from generation to generation.

> "Truth crushed to earth shall rise again,
> The eternal years of God are hers,
> But error wounded, writhes in pain;
> And dies among his worshippers.

A noble and heroic action once performed is never lost to humanity, although the name of the hero and the actor may be forgotten and the particular incidents of the action itself cease to be remembered in future years, still the spirit of the act and the principle that prompted it remain impressed upon the mind and heart of humanity, and there will ever remain until the race shall be extinct. So with a sentiment or thought once uttered or expressed to human understanding becomes immortal and goes to swell the great ocean of mind.

Here is encouragement to the noble, the gifted and the good, the earnest and the true, to struggle for the right, amid all the storms and conflicts of life, sunshine and gloom, knowing that their struggles will not be in vain. What though they meet with cold and calous hearted neglect, scorn, callumny and derision, and become broken with the strife and sink to an untimely grave unannalled and unknelled, their names and their actions forgotten and lost in the oblivion of the past, yet the truth of their acts and their words will have become a part of the great reservoir of mind and thought.

Continuous, unceasing struggle, toil, energy and perseverance is the lot of man, greatness, goodness, happiness and pleasure can only be attained and permanently enjoyed by continual effort.

The injunction that "*man shall eat bread in the sweat of his face*," imposed upon him no new burthen; it was the announcement of a living principle of his being, enforced by the laws that regulate and govern his life and the world of matter around him, and cannot be violated without serious detriment to his physical, mental and moral condition. Nor do we believe that the injunction to labor was imposed upon man as a curse, but on the contrary a blessing. It is necessary to his happiness and in conformity with the wants and requirements of his nature.

But this, like other benevolent gifts of the Creator, has been in many instances turned into a *damning* and *bitter curse*; by reason of the fact that a large portion of mankind have sought to avoid its obligations, but such avoidence like a two edged sword wounds both the indolent and the industrious. To the indolent man it induces vices that impair his physical constitution, prostrate his mental energies, blunt his moral perceptions, and break the link of sympathy between himself and a large portion of his fellow-men. To the laboring man it is a curse, because it imposes more labor upon him than he can bear without serious injury to his manhood. Instead of being a means of imparting energy and vigor to his physical system, so that it might be able to bear a higher state of mental and moral culture and development, it brutalizes and stultifies both his mind and body, so that he is rendered incapable of fulfilling the great end and object of his being. This degradation and shame which has heretofore been attached to the performance of labor, and a large portion of mankind, therefore, seeking to avoid it, is the cause of most of the evils which afflict society. It is this that has induced warlike nations, because they had the physical force, to overrun and subdue the weak and dispoil them of their well earned wealth. This desire to avoid labor gives rise to those moral pests of society, the speculator, the swindler, the cutthroat, and every conceivable effort on the part of the fraudulent and designing, to appropriate the proceeds of the labor of others.

Thus there has gradually grown up a great inequality among men in regard to their physical, social, moral and political condition.

It is one of the cardinal objects in the great mission of the christian civilization to destroy this inequality—to reclaim, cultivate and restore man, not only to his primeval innocence and purity, but to give him that ultimate purity, and integrity of character which can only be attained through the fiery ordeal of trial, temptations, afflictions and experience.

But christianity has only promulged the great fundamental truths upon which the superstructure of the christian civilization is to rest. The details are properly left to the guidance of the reason, judgment and experience of mankind; were it not so there would not be the same inducement there now is, for the exercise and consequent development of all those great mental and moral qualities which contradistinguish man from the brute, and indicate that he bears upon him the impress of divinity itself.

The constant effort of the great, the noble, the heroic and the good, to remove and overcome, the evils which environ them, and are ever preying upon the very vitals of society; calls into action all the varied powers of the human mind. And hence is always enlarging its compass, developing its capacity and increasing its force, to accomplish its great mission, the subjugation of the earth and making it yield up all of its hidden treasures to minister to the wants and happiness of man.

This has been specially manifest since the discovery of the art of printing, through the instrumentality of this great art, one intelligent mind can commune with millions of other minds. Hence the power of one gigantic intellect to do great good or great evil to society has wonderfully increased. The discovery of this art has been the immediate cause of material and important changes in the social and political relation of communities and nations. Through it, men of similar views, sentiments and ideas, have been enabled to associate together for the accomplishment of their purposes; this has led both in Europe and America to almost every variety of organization, social, political and religious; and thus gradually have all learned to appreciate the mighty power and moral force of numbers when combined for the accomplishment of a particular object, and animated, strengthened and kept together in the spirit of unity, through the instrumentality of the PRESS.

This prevalent spirit of association arising from necessity among the weak and the poor, to protect themselves against the incroachments of the wealthy and the strong, and which constitutes one of the cardinal features of the age in which we live is pregnant with important meaning and future hope to the masses; the laboring and producing classes, those who may be said to constitute the life blood of a nation giving to it the elements of greatness, wealth, glory and renown.

The consolidation of the lands of Europe into the hands of the few, by means of the laws of primogeniture, entail, and other arbitrary customs, especially in England, and the constant increase and density of population, together with the extraordinary improvements continually being made in labor-saving machinery, has brought about a social and political problem which puzzles the greatest, the wisest and the best; yet, which must, nevertheless, be solved sooner or later. This was the primary and fundamental cause of the recent extraordinary social and political storms, convulsions and revolutions in Europe, which shook society to its centre. And although the muttering thunders are hushed for the time being; although the combination and treachery of crowned heads through the aid of physical force, has apparently crushed the movement, and lulled the storm into quietness and peace. It is only a temporary pause; the evil is not

yet removed—things are still in the main as they were, and there must be a gradual change and approximation to right principles in moral, social and political reform by those now in power or else the storm cloud will rise again with redoubled violence and fury.

Many men in Europe to whom we must award at least great ability have proposed plans of association and action, calculated as they believe, to ameliorate the condition of the laboring and producing classes—among these we may mention Fourieur as one of the most prominent.

These gentlemen, aware of the power of the public press, and seeing the tendencies of the past and present age to organisms and associations—and seeing the stupendous effects of a political association under a republican constitution in the United States, in elevating and giving character and dignity to the American people, have seized upon the idea of associating the individuals of communities under fraternal bonds for all, social, industrial and domestic purposes.

For those of our readers who may not be familiar with the cardinal principles and doctrines costituting the basis of socialism or communism, we propose to give a brief sketch of its most prominent features, not, however, endorsing them: but that our readers may know the elements at work in Europe as well as in some of our own Atlantic States.

They hold that the products of the earth are as necessary to man's subsistence, as the air we breathe or the water we drink; and, that for that reason, should be free for all to cultivate who desire; that all laws permitting individuals to monopolize more of the soil than they can cultivate and make yield to the wants of themselves and others, are repugnant to the principles of natural law and in controvention of human rights. They believe that labor is not only a duty but a means of happiness, and should be shared alike by all as far as practicable. That the present and past degraded condition of labor in Europe and the inadequate compensation it receives, arise from glaring and radical defects in the whole social system of the civilized world; which defects can and should be removed. Among those defects, they include as one of the most prominent that of social legalised individuality, by which one man is allowed all he can get, to the exclusion of all the world besides; though millions may be starving around him and becoming brutish from too much physical labor, and the want of proper mental and moral culture.

They say too, that the invention and improvement of labor-saving machinery that should have been a solace and a blessing to the laboring poor, by releasing them from the necessity of so much toil, has proved, and will continue to prove, a curse under this individuality system. That the individual capitalist is thus enabled to put in competition the unfeeling iron and wooden machine, driven by the mighty power of the steam engine, against human muscles and human flesh and strength—that this competition reduces the wages of labor: the capitalist reaping all of the profits arising both from the machine and and the man.

They hold that these social defects can be removed by *fraternal association*, where all shall labor for their own and the common good, according to their respective tastes and capacities—where all shall be

trained and educated mentally, morally and physically—where all shall be clothed and fed, and when sick taken care of as a brother. By such fraternization and combination of labor, skill and enterprise, with the use and application of labor-saving machinery, they believe that much less labor will be required per day to each person, than in the present state of society; and that, consequently there will be a great saving of time for the improvement of the mind, the cultivation and refinement of the tastes.

They believe that under such a system of society, manhood would assume a much more elevated and perfect tone, than it has ever done under any other form of society—that crime would diminish, because the inducement to crime would be taken away—that the canker worm of care, anxiety and despair would not gnaw upon the vitals as it now does, because domestic safety would be guarantied to all. They say that individual happiness would be increased to a great extent, because such a system is calculated to draw into action social love as well as self-love. That these two feelings in the human breast constitute the two principal springs of human action. That the present social *individuality* system is calculated to cultivate and perpetuate self-love exclusively—arising from the fears of future want and starvation, should the individual strip himself, by too much self-sacrifice or generosity.

They deny that their principles, if properly systematised in the organization of a community, would induce indolence, or cut the sinews of individual industry. On the contrary, they hold that from the fact, that each individual would be allowed to choose his own occupation according to his taste, inclination and capacity, it would prove a stimulant to industry. That a generous emulation and competition would still exist to incite men to action. But, that instead of the emulation or competition being for the mere acquisition of individual money or property, it would be that noble and generous emulation—to excel in the useful arts, the sciences, literatuer and moral excellence.

But above all, they believe that such a system would elevate and dignify labor and render it attractive and a pleasure; and that men would no longer seek to avoid it as fixing upon them a badge of degredation and shame.

We have thus briefly sketched what we believe to be the prominent features of socialism. Many of their principles are sound, and must, in time, become incorporated in the frame-work of all societies under the influence and control of Christian civilization. But the great mistake which these and other reformers have made, is in supposing that they can effectually and permanently organise an entire separate and distinct society, radically different in every element and feature from society as it exists at the present time—such never has been the case in the past—such never can be the case in the future.

The peculiar organization of society, its laws, customs, and usages is a part, and an important part, of the education of every individual member of that society. He grows up in conformity to those laws, usages, and customs, they have left their impress for good or for evil, upon his mind, his heart and his habits; and he is thus, in a great degree, unfitted for any sudden or radical change in the social

system. Then, too, there are many ties and endearments that bind him to society as it is, and he would rather endure evils that can be endured, than fly to that which is untried, however flattering the prospect: though truth itself may seem to be its basis.

Society is progressive; and, a principle that it may condemn and reject in one age, may yet, if founded in truth, be incorporated in it in the process of future ages. Great social changes, however, are always of slow growth: for, as we have before observed, error is conservative, and is always opposed to anything which disturbs the elements of social order as they are established.

Still, there is hope for the philanthropist and the patriot; for, although success may not attend the first presentation of a great truth, yet, the young, the ardent, the generous, the noble and the self-sacrificing will, at all times, comprehend and receive its impress; they will transmit it to future time, and thus it passes down from age to age, gathering volume and strength in its course, each generation receiving it as a heritage of their fathers, until finally it is regarded as a fundamental principle of the social structure. This is the only way in which permanent, legitimate social reform can be accomplished. In this way, many great, good and competent reforms have already been made, socially, politically and religiously.

The mere promulgation of an abstract truth or principle is not all that is required—a fool may do that—but to fit that truth upon the body politic, or incorporate it into the social fabric, requires profound judgment—clearness of vision—firmness of character—unremitting effort, devotion, and a high moral integrity.

The organization of society, its laws, customs, habits, and usages, are but the exponents of its intellectual and moral development; and any plan of amelioration which is in advance of this intellectual tone and moral sentiment, will be found to be unsuited to that people, and will inevitably be rejected.

Educate, moralize and Christianize a people and they will make their own social and political reforms, just in ratio to the amount of intelligence they thus acquire.

For ourselves, we believe that christianity constitutes a basis broad enough and deep enough upon which to build every superstructure of reform necessary to the elevation and happiness of the race—that if degraded humanity is to be ever regenerated, disenthralled and redeemed from the errors of the past—that if ever the lowly, the meek and the suffering are to be lifted up and their sorrows assuaged; that if ever the weeping widow and lonely orphan, are to be comforted and made forget their loss in this world, it must be through the divine instrumentality of the christian religion, acting upon the hearts and consciences of men.

But whilst we believe that the dream of socialism, of re-organizing society upon the particular plan of any one man or set of men must fail and pass away like the mists of the morning, still we do not object to the efforts which these, or any other, sincere reformers are making to elevate labor and make it respectable and attractive. Such a result is most devoutly to be desired, and must ultimately be brought about as intelligence increases among the laboring and producing classes. We take it for granted too that every great social

movement of the kind is founded upon a great want, arising from the circumstances and condition of society, thus each proposed reform is based upon a great truth and its advocates bring it prominently forward and press it upon the age; and although they may be mistaken in regard to its true applicability and importance to society, and consequently fail in their design and efforts; yet the truth itself is never lost but is gradually adopted as the condition, wants and necessities of society require.

But however much socialism may agitate and lash into fury the popular waves in Europe, by reason of the density of population, their system of land monopoly and arbitrary distinctions among classes, all of which tend to make the rich richer and the poor poorer, it has little or no applicability in the United States. Our free institutions, great extent of territory, fertility of soil and variety of climate, will for ages yet to come, afford an outlet to our surplus population in the older and more densely settled States.

Still, it is highly important that we should observe the condition of things and passing events in Europe. Because we are but her offspring, and from our social connection, what affects her must sooner or later affect us, either directly or indirectly. Her people are constantly flocking to our shores and becoming incorporated into our political family, it is, therefore, important that we should know something of the laws, customs and moral influences, acting upon hem in the land of their fathers. Indeed, we look upon the nations of the earth constituting christendom proper as one family; and what materially effects the institutions—the social and moral condition of one, affects directly or remotely the other also.

Although, under our free institutions we enjoy religious, social, and political blessings, to an extent perhaps that has never been awarded to man before, although we possess an almost boundless extent of territory, teeming with fertility—a variety of climate adapted to every constitution and taste—still we are not to suppose that we have achieved all that is necessary to happiness, or to social and political perfectability. Many of our laws, customs and usages are exotics, transported hither from the arbitrary Governments of Europe, and are in controvention to the genius of our social and political institutions, repugnant to the character and wants of our people. We are, therefore, in a state of constant transition, and if we are true to ourselves we will derive lessons of wisdom from the misfortunes of Europe and avoid the rocks upon which she has split; we will so shape our social and political institutions that the increase of population shall be an increase of intelligence, happiness, virtue and national glory and renown.

ST. LOUIS GLASS WORKS.

These works were originally projected by Messrs. Farrell and Blow; and went into operation in October, 1849; but owing to an unskilful construction of the furnace and ovens, it was found necessary to make important alterations before success could be attained in the production of glass. At this discouraging point in the history of the establishment, our public spirited and well-judging citizen, Wayman Crow, Esq., became the purchaser of Mr. Blow's interest, and formed a company with chartered privileges, under the provisions of the general incorporation law of this State.

The company proceeded to pull down and reconstruct the furnace, ovens &c., and the works again went into operation on the 11th day of March last. The establishment is located in the southern part of the city, on a lot of ground containing ten acres, owned by the company.

The Glass Factory is a circular building sixty-three feet in diameter—the basement story of substantial stone work. The furnace contains eight pots capable of producing two hundred boxes of window glass per week. Adjoining the factory is a building ninety feet long by fifty feet wide—one story high. In one part of this building, the cylinders are flattened and subjected to the process of annealing, and in another part the glass is cut and packed in boxes. The flattening department is very complete in its arrangements, and is capable of flattening a thousand cylinders in twenty-four hours.

The sand used in the manufacture of glass is brought from Ste. Genevieve, and is not excelled, perhaps, by any that has ever been discovered. The coal used is from the mines near the city. Some of the specimens of glass that we examined are very beautiful; and, in our opinion, far excel any that we have ever seen from the works on the Ohio river; and will compare favorably with that of French manufacture.

These works are now placed upon a footing calculated to secure the most complete success, and, we may now regard the manufacture of glass as permanently established in our city.

The works are under the superintendence of Mr. John W. Farrell, to whose foresight and enterprise our community is indebted for the introduction of this important branch of industry.

We rejoice to see manufactures and the arts progressing westward; and delight to record the names of the pioneers who are instrumental in diversifying labor, by the introduction of new pursuits—who increase the wealth and independence of the country by developing its natural resources. We know something of the difficulties which they encounter, and how little encouragement and sympathy they generally receive from their cotemporaries; and did they not possess more energy and zeal for the common welfare than falls to the lot of ordinary men, few would succeed in their generous undertakings. We have ever regarded such individuals as public benefactors, and the true heroes of peace and social progress.

PACIFIC RAILROAD CONVENTION AT PHILADELPHIA.

We copy from the Rail Road Journal, the proceedings of the Convention which met at Philadelphia, on the 1st inst. We are gratified that this, as well as the St. Louis and Memphis Conventions, have adhered to the principle of making the Pacific railway a National work. We trust that after the opinions expressed upon this point by three great Conventions ; Congress will proceed to act upon the subject without further delay, and, that it will not consume time, in further considering the projects of individuals. Editors.

"The Convention met on the 1st inst., and was finally organised by the choice of Wm. B. Ogden, Esq., of Illinois, as president.

Vice Presidents.

Pennsylvania—Edward C. Hubley.
Delaware—C. J. Dupont, Judge Harrington.
New Jersey—Benjamin W. Cooper.
Virginia—Hall Neilson.
Ohio—J. H. Godman.
Illinois—H. K. Strong.
Iowa—Hon. G. W. Jones.
Missouri—Hon. J. B. Bowlin.
New York—C. Colton.
Michigan—J. Biddle.
Rhode Island—Van Ransselear Stevens.
Massachusetts—P. P. F. Degrand.
Arkansas—J. H. Storman.
Indiana—Hon. John L. Robinson.
Texas—W. R. Ochiltree.

Secretaries.

Pennsylvania—Thomas Birch, Jr.
Missouri—A. B. Chambers.
New Jersey—Philip J. Gray.
Delaware—Dr. J. W. Thompson.

"The chair announced the committee on resolutions to be composed of the following gentlemen :

"Samuel R. Curtis, of Iowa ; Hon. J. B. Bowlin, Missouri ; H. K. Strong, Jr., Illinois ; John Biddle, Michigan ; David C. Wilson, Delaware ; James H. Godman, Ohio ; J. F. Johnson, Virginia ; Joseph Buffum, Rhode Island ; Alfred Wallace, Arkansas ; John A. Roebling, New Jersey ; Asa Whitney, New York ; C. T. Laport, Massachusetts ; W. B. Ochiltree, Texas ; Thomas M. Pettit, Pennsylvania.

"After some other unimportant proceedings, Mr. Curtis, of Iowa, as chairman of the committe on resolutions, reported a series of resolutions, which had been agreed upon. The committee had not adop-

ted any of the plans submitted to them, and, indeed, had not had time to properly consider them. They had, therefore, adopted general resolutions, which he read as follows:

"Resolved, That in the opinion of this convention, a railroad communication connecting the navigable waters of the Mississippi with the navigable waters of the Pacific ocean, is practicable, and its construction is desired immediately. It is, therefore, the duty of Congress in some way to apply the energies of our country, so as to secure the earliest possible completion of such a work.

"Resolved, That the work is national in its character, and should, therefore, be constructed by national means; but to avoid State and local prejudices, the government should confine its operations to the country beyond the limits of the organized States, leaving the various branches within the States to be constructed by such means and on such routes as the States may prefer.

"Resolved, That to aid the States in carrying forward their lines to the main trunk, liberal appropriations should be made of the public lands adjacent, to be applied as the States may consider expedient.

"Resolved, That Congress be memorialised to take such steps, as in its wisdom may be deemed expedient to accomplish the great object contemplated in the foregoing resolutions—commencing with a thorough survey, by competent engineers, of all the routes that may be considered practicable."

The following resolution, which we earnestly recommend to the consideration of our readers, was offered by S. W. Roberts, Esq., and unanimously adopted.

"That it be recommended to the American people in all parts of our common country, to urge upon Congress by numerous petitions, to make an early and ample appropriation for surveys of the most feasible routes for the construction of a direct railroad to California and Oregon from the valley of the Mississippi."

BUREAU OF STATISTICS OF THE STATE OF LOUISIANA.

We have received the "Introductory" to the first report of the Superintendent of the Bureau of Statistics, established by the Legislature of Louisiana. The establishment of this office is highly creditable to the intelligence and public spirit of the State; and we are much pleased that the talented editor of the Commercial Review has consented to undertake its superintendence.

The measure, we believe, was originated by Mr. De Bow; and we feel assured that he will give it an organization that will make it eminently useful, and a model for similar establishments in other States.

Since Louisiana has set the example, we entertain a hope that other States will follow. No individual can be considered fully competent

to legislate for the State to which he belongs, without a thorough knowledge of its resources; and it may be regarded as the first duty of the Legislature of every State, to provide the means of furnishing this information.

Besides the advantages derived from a more enlightened course of legislation, the cost of establishing and sustaining a Bureau of Statistics would be saved by shortening the time consumed in legislating; and more than all, it would compel the demagogue, and mere politician to become a statesman, or give place to better informed men. We respectfully call the attention of the aspirants for a seat in the next Legislature of Missouri, to this sucject; and beg to suggest the propriety of their canvassing it before the people.

PERIODICAL LITERATURE.

We are pleased to discover that a gradual improvement is taking place in the character of the newspapers and periodicals, throughout the Union. With an occasional exception, the conductors of the Press have assumed a more dignified bearing, and evince a desire to furnish the public with more solid and useful matter. We sincerely hope, that the experiment of treating their readers with respect, will prove successful, and result in profit to both publishers and readers. We never could understand upon what principle of morals or decency, an Editor considered himself authorised to publish events and discuss topics which are not admissibe as subjects of conversation among people of ordinary refinement; or, use epithets and coarse language through the medium of a newspaper, which have been banished from all, except the society of blackguards.

Having noticed the general tendency to improvement, we may be allowed to call attention to some of the publications which are designed to impart scientific and practical information, relating to the general economy and pursuits of the country.

THE AMERICAN RAILROAD JOURNAL.

At the present time, when the subject of railway improvement occupies so much of the public attention, no work that could be obtained at the same cost, would be more useful to the country. Indeed it is the only source within our knowledge, whence a thorough history of railroads, embracing their location, cost, profits, &c., can be derived. The subject of steam navigation, commerce, mining and manufactures, have also their respective departments in the work. The American Railroad Journal is published weekly, in the city of New York—Edited by Henry V. Poor, Esq.,—Price five dollars per annum, in advance.

SCIENTIFIC AMERICAN — THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL, AND OTHER IMPROVEMENTS.

This valuable publication comes fully up to all that its title imports; and should be read by every individual who desires to be informed in respect to the improvement of the age. The Scientific American is published weekly by Munn & Co., New York, at $2 per annum.

THE ECONOMIST.

This we esteem among the best of our exchanges. It was established at Cannelton, Indiana, about one year ago, by Charles H. Mason, Esq. The Economist is the especial advocate of manufacturing in the West; and has done more, perhaps, within the time of its existence, to bring this great interest fairly and fully before the people, than any other paper. We commend it to the patronage of every Western man.

THE GREAT WEST.

Though occupying a department of literature different from our own, yet we are constrained to give this excellent family paper a place in our list of valuable publications. It was a bold experiment to undertake the publication of a "literary family paper, devoted to instruction and amusement," in the West; and the author of this enterprise is entitled to the thanks of the country for supplying it with a paper at least equal, if not superior, to any of its class published in any part of the Union.

WHITNEY'S RAWAILY PROJECT.

We have received the speech of Judge Bowlin recently made in Congress, on the proposition to set apart and sell to Asa Whitney, a portion of the public lands, to enable him to construct a railroad to the Pacific Ocean. We take pleasure in observing, that while the legislative functions of Congress have been paralysed by the slavery question, for nearly five months, our immediate representative has been actively engaged in measures relating not only to the interests of his constituents, but to the country at large.

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Saint Louis Furniture Store,

WM. M. HARLOW, proprietor. Manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, willow ware, &c., &c.

Also, manufactures to order every article in his line, with despatch. Orders from abroad promptly attended to, and goods carefully packed. All goods warranted, as recommended

New Warehouse, No. 88 Second street, between Olive and Locust streets, St Louis, Mo.

Clothing at Wholesale.

ARCHIBALD YOUNG & CO., 99 Main street, St. Louis, Mo. Wanzer Minor & Co., 126 Pearl street, New York, Moses Wanzer and Henry J. Minor, New York, Archibald Young, St. Louis.

N. B.—We manufacture all of our own goods, and sell at the lowest possible prices.

ROLLIN CLARK, JOHN RENFREW, } PHILANDER BRALEY, ALEXANDER CROSIER.

Eagle Foundry and Engine Shop.

NORTH west corner of Main and Biddle streets. Manufacturers of all kinds of machinery, boilers and sheet iron work, portage circular saw mills always on hand, all orders executed with fidelity and despatch.

A splendid fortune may be gained by an outlay of £10 or £5.

Metropolitan Portrait Club.

Offices—88, Albany road, London, England.

THE Directors beg to announce that there will be drawn for a grand series of portraits of all horses entered for the forthcoming Great Derby Race.

The drawing will be conducted upon those honorable principles which have hitherto given so great satisfaction, and secured to the above aossociation such extenstve patronage; and that while the past success and high estimation in which the club is held are subjects of pleasing congratulation to the projectors, they encourage endeavors for a still further development of their plan. For the future, therefore, the number of prizes will be extended to the portraits of all horses that are entered for each particular race.—Non-starters as well as winners and starters. The following list is now open:

5,000 members to each class. First class £10, second do. £5, third do. £1.

Parties can have one or more shares in each or either of the different classes.

Those members who draw the portraits of first, second, and third horses, the other starting horses, also those that do not start (but which are entered for the race), will receive the following prizes. The drawing will take place ten days before the races.

	Portrait of first horse.	Do. Second do.	Do. Third do.	Divi'ed am'gst the portraits of Starters.	Do. Do. non starters
First class	£20,000	£10,000	£5,000	£5,000	£10 000
Second do.	10,000	5,000	2,500	2,500	5,000
Third do.	2,000	1,000	500	500	1,000

The number of prizes to be distributed in each class are 209, that being the number of horses entered for the race. All letters to contain a remittance drafts, bank-notes, &c., addressed and made payable to the managing director.

JOHN BURRIDGE, Esq., 88, Albany Road, London, England.

Numbers forwarded immediately on receipt of a remittance. Full particulars of the race will be sent with the fortunate numbers to each subs riber, so that he may know his position and whether or not he be one of the fortunate. Office commission 7 1-2 per cent., to be deducted from the above prizes.

N. B.—Lists open for the St. Leger same as the above.

J. HENWOOD,

Hat Manufacturer, 72 Chesnut Street, St. Louis, Mo.

Missouri State Mutual Insurance Company.

DIRECTORS:—John O'Fallon, C. M. Valleau, Reuben Knox, Daniel D. Page, Oliver Bennett, John Sigerson, John S. McCune, Joseph A. Eddy, True W. Hoit.

This company is established upon the mutual principles of insurance, and is emphatically a home institution. The fire risks of this company are extended into all parts of this State. Its earnings are never employed or invested in stocks or real estate, but kept for the prompt liquidation of losses, and under the immediate control of the Directors. Every person insuring with this company becomes interested in its success, and its profits instead of being divided among a few stockholders, belong to those who insure in this company.

The Directors aware of the importance of a well secured fund, reliable in case of loss, and ample under all ordinary calamity, assure the public that they have already a pledged fund ample and reliable for any contingency, with a monthly increase of premiums of over ten thousand dollars. For the length of time this company has been in operation (six months) its business has been extended into all parts of the State and the city, and has received from the public a liberal patronage, which has placed it upon a permanent basis.

By an act incorporating this company, the parties insuring property therein, are entitled to the entire profits of the institution, the premium notes are also pledged by the charter for the payment of losses.

The portfolio of the company is at all times open to the inspection of its members and those wishing to make insurance with it. Policies are issued from thirty days to six years, thereby effecting a permanent insurance, with a return premium of from fifteen to fifty per cent, according to the term of insurance.

Agents for this company, may be found in all the principal towns in the State to whom applications may be made.

Office of the company over E W. Clark & Bro., corner Main and Olive streets, Exchange building, where insurance will be effected at the tariff rates of premium.

C. M. VALLEAU, President,

H. D. BACON, Treasurer.

S. F. LEDYARD, Secretary.

Home Mutual Fire and Marine Insurance Company of St. Louis.

NOTWITHSTANDING the heavy loss sustained by this company in May last, the stock notes now on hand amount to $350,000. The stock notes of the company are secured by lien upon real estate and approved endorsers. Office, No. 120 North Third street.

Directors:—I. L. Garrison, A. P. Ladew, P. Salisbury, Jno. Whitehill, Jos. A. Eddy, Henry Kayser, D. D. Page, Theron Barnum, John Kern.

ISAAC L. GARRISON, President,

D. D. PAGE, Treasurer,

PHILANDER SALISBURY, Secretary.

GLOVER & CAMPBELL,

Late of Palmyra, Mo., Attorneys at Law,

SAINT LOUIS.

John C. Meyer,

Dealer in Hides, Leather, Oil and Findings,

No. 88 North Main Street, St. Louis.

H. W. LEFFINGWELL, Notary Public. R. S ELLIOTT, Com'r of Deeds.

Leffingwell & Elliott,

REAL ESTATE Dealers, Auctioneers and Conveyancers, No. 123 Chesnut street. St. Louis, Mo. Real Estate sold on commission, at private sale, or auction. Also, Deeds of all kinds written, and acknowledgments taken. Maps of the city and additions, to be seen at the office, and information given free of charge. Surveying done promptly and correctly.

Charless & Blow,

NO 70 and 72, Exchange Building, St. Louis, Mo., Importers and dealers in drugs, medicines, oils, paints, dye stuffs, perfumeries, window glass, glassware, &c.

O. W. Jerome,

WHOLESALE and retail dealer and manufacturer of Cabinet Furniture, chairs, bedsteads, &c., Nos. 44, 46 and 48, Olive street, opposite the Monroe House, St. Louis, Mo.

Sligo Book Store and Paper Warehouse.

AMOS H. SHULTZ, No 136, north Main street. St. Louis, opposite the Bank. Wholesale dealer in books, paper and stationery.

THE undersigned takes the liberty of informing you that he has removed his place of business to Olive street, a few doors above Main, south side, in the Exchange Building, and three doors above Messrs. E. W. Clarke & Co.'s Banking House, where he is now opening, and will continue to receive during the Spring months, a large and full assortment of the most

Fashionable Styles of Goods,

In his line, for gentlemen's wear; and where he will be pleased to see his old friends and customers, and their friends with them; and assures those who may favor him with their patronage, that they shall receive his personal attention, and his best efforts to please. Very respectfully, your ob't servant,

J. G. SHELTON.

Giles F. Filley,

MANUFACTURER of the celebrated prize premium cooking stoves; also, Irving's air tight cooking stoves, fancy parlor stoves, fancy box and coal stoves; dealer in tin plate, copper, sheet iron, block tin, rivets, tinner's tools, machines, &c. Warehouse No. 163 north Main street, St. Louis, Mo. Foundry on Lewis street, near the water works.

TOBACCO.

T. MULLEN, Tobacco Commission Merchant, 21 Washington Avenue, St. Louis, Mo for the sale of Cuba and Havanna Tobacco; also, for Virginia manufactured tobacco, for which he has the agency.

Great Western Clothing Emporium!

WHOLESALE AND RETAIL,

No. 124 and 126 Second street, corner of Vine.

W. L. & J. BIGELOW & Co., St. Louis, Mo.

BAKER, NELSON & Co , 51 Cedar street, New York.

Fallon & Wright,

CARRIAGE manufacturers and dealers, No. 90, Fifth street, between St. Charles and Locust, are constantly manufactur ng, and have on hand, all styles of carriages, which they will sell on the most reasonable terms They flatter themselves from the experience they have had in the business, to be able to furnish as good an article as can be bought in any market. Citizens and strangers are reques'ed to call and examine for themselves. All carriages made by us are warranted to be as represented, or the money refunded. WESLEY FALLON,
JAS. A. WRIGHT.

John Mullery,

PREMIUM Horse Shoer, in the alley, opposite the Post Office, will as usual pay particular attention to the various diseases affecting the feet of horses, and will guarantee to give general satisfaction in either of the above departments.

Fruit Trees and Shrubbery,

For sale by JOHN SIGERSON & BROTHERS, at their fruit farm and nursery. This establishment is located seven miles South of St. Louis, Mo. There are Omnibus Coaches running daily from the City within one half mile of the establishment. The Nursery and Gardens are open at all times (Sundays excepted) for the recep'ion of visitors. Horticulturists and Amateurs are respectfully invited to visit the establishment and examine for themselves. In directing the attention of the public to their nursery, they would remark that one of the firm, (Mr. James Sigerson,) has been engaged in the above business for the last twenty five years; during that time he has tested many of the varie'ies now growing. This, with the assurance on their part of an intention to increase the number of their trees, as well as to add to their assortment from year to year, furnishes a strong guarantee to persons wishing to make choice selections of fruit, that they can always be supplied. Their prices for trees will be as reasonable as at any similar establishment East or West, and when desired, trees will be delivered free of charge in the city or on steamboats; packed in good order for their destination.

☞All letters addressed to John Sigerson, St. Louis, or to James Sigerson, Carondolet, will meet with prompt attention.

JOHN SIGERSON & BROS.

J. BUNDING. B. VOIGT.

Bunding & Voigt.

WHOLESALE dealers in drugs, chemicals, paints, oils, dye-stuffs, window glass, glassware, &c., &c. No. 100 Main street St. Louis, Mo.

P. Hayden,

(SUCCESSOR TO P. WILSON & CO)

IMPORTER and manufacturer of saddlery, hardware, carrriage trimmings, saddle trees, hog skins, skirt ng, harness and bridle leather, wood and iron hames, &c. 47 Second street, (east side between Pine and Olive streets,) St. Louis, Mo. Manufac uring the greater portion of the articles in my line, and importing the remainder, my advantages are superior to *any house in the trade.*

HUDSON E. BRIDGE. HARRISON P. BRIDGE.

BRIDGE & BROTHER,

No. 158 Main Street, St. Louis, Mo.,

MANUFACTURERS of Pierce's Patent "American Air-Tight," "Empire" and "Victory" Premium Cooking Stoves, and every variety of Wood and Coal heating Stoves, dealers in Tin Plate, Copper, Sheet Iron, Iron Wire, Tinners' Tools, Machines, also, manufacturers of Jewett's Improved Patent Cary Ploughs.

J. BLAPPNER,

MATHEMATICAL and Surgical Instrument maker, Dealer in Guns, Pistols and Sporting Materials, No 68 North Second Street, between Pine and Olive, St. Louis, Mo., Manufactures and has always on hand; Surveyors Compasses and Chains, Levelling Instruments, Theodolite Pocket Compasses, Spy-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Microscopes and Magnifying Glasses, Hydrometers of silver and glass, Hydrometers for acids and salts, Magic Lanthorns, Electrical Machines, &c., also-- Surgical and Dental Instruments; Pocket, Dissecting, Cupping and Self-injecting Cases; Taylor's Shears, all sizes, Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; Large Scales and Weights, for Druggists; Prescription Scales on Stands; Revolvers, Guns, Pistols, Powder Flasks, Game Bags, &c., ☞All the above Instruments repaired at short notice in the best manner.

CHARLES T. WILGUS. JOHN S. WATSON.

WILGUS & WATSON,

HOUSE, Sign Steamboat & Ornamental Painters, Glaziers, Paper Hangers, Whiteners and Wall Colorers, No. 52 and 54 Pine Street, Saint Louis. Also, Dealers in American and French Paper Hangings, in great variety and of superior quality; White Lead, Oil, Turpentine, Varnishes, Window Glass, Putty, and every variety of Paints, wholesale and retail.

WILSON & BROTHERS,

WHOLESALE DEALERS IN HARDWARE, corner of Main and Olive streets, St. Louis, Mo.

C. BENEDICT, Danbury, Conn. D. PEARCE, St. Louis, Mo.

DAVID PEARCE, & CO.,

MANUFACTURERS and wholesale dealers in Hats, Caps and Straw Goods, No. 120 Main street, St. Louis, Mo.

HEWITT & STEINACKER,

SADDLE, Harness and Trunk Manufacturers, wholesale and retail, No. 67 Fourth street, corner of Pine, opposite the Planters House, St. Louis, Mo.

M. B. COX. WM. M. SIMPSON. GEO. BURNET, Jr.

M. B. COX & CO.,

WHOLESALE dealers in Boots and Shoes, Shoe Findings, Hats, Caps and Bonnets, Artificial Flowers, Umbrellas and Parasols, Pongee and other Silk Handkerchiefs, Hosiery and Gloves, Trimmings, Small Wares, and Variety Goods, No. 91 Main street, east side, between Locust and Olive, St. Louis, Mo.

J. A. ROSS,

SCALE AND SPUR Factory, Brass Foundry and Machine Shop, 202 north Second street, between Morgan and Cherry sts., St. Louis, Mo. Constantly on hand and manufactured to order, Platform Scales of all sizes, Counter and Druggist Scales, Flour, Floor, Hay and Car Scales. Also, Beam Scales, of Iron or Brass. Scales repaired with neatness and despatch. Spurs, for Dragoons and others, and Brass Castings furnished on short notice.

P. WONDERLY,

MANUFACTURER of Copper, Tin and Sheet Iron Work—such as Copper Pipes for Steamboats and Distilleries, Soda Fountains, Copper Kettles, Well and Cistern Pumps, and every other article in his line of business; No. 233 Main street, south east corner of Cherry, St. Louis, Mo. He also manufactures and keeps constantly on hand, Premium Steamboat Cooking Stoves. Tinware always on hand, wholesale and retail.

PAWLEY & HAWKINS,

MANUFACTURERS OF FIRE PROOF VAULTS, Safes, Iron Window Shutters and Doors, cast and wrought iron Railings, and all kinds of ornamental iron work. Also, heaters for public and private buildings.

In the manufacture of Iron Railing, either wrought or cast, over five hundred designs in their possession may be examined, embracing all the most beautiful patterns of the eastern countries, public and private buildings.

Every article in their line, made with despatch; and warranted equal to any manufactured in the United States. No. 41 Third street, St. Louis, Mo.

Doan, King & Co.,

WHOLESALE Dry Goods dealers, 131 and 133, Main street, St. Louis. Job P. Doan, St. Louis, Wylley King, do., Richard Bigelow, New York.

Edward Mead,

IMPORTER and wholesale and retail dealer in watches, jewelry, cutlery, guns, pistols and fancy goods, No. 83, north Fourth street, first block north of Planters' House, east side, St. Louis, Mo.

Crow, McCreery & Co.,

WHOLESALE dealers in Dry Goods, No. 71 Main street, St. Louis, Mo. Wayman Crow, Phoceon R. McCreery, Wm. H. Barksdale, Wm A. Hargudine, Chas. D. Appleton.

Woods, Christy & Co.,

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OF

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NOTE.—We owe an apology to our much esteemed correspondent, J. T. Cleveland, Esq., of Mo., for omitting to insert his valuable article on the culture of hemp, in the table of contents of the last number of the Western Journal. The article will be found at page 51. We take this occasion to commend it to the perusal of the hemp growers throughout the country. EDITORS.

THE

WESTERN JOURNAL.

VOL. IV. MAY, 1850. NO. II.

ART. I.—INTERNAL IMPROVEMENTS—PLANK ROADS.

Although money is generally regarded as the principal agent of commerce, yet when we analyze commercial operations between different countries, we find them based, almost entirely, upon the exchange of consumable commodities. The exchangeable or commercial value of these commodities, at the place of production, depends, in a great measure, upon the labor and cost of placing them in the hands of the consumer. The minimum value being at the place of production, and the maximum at the place of consumption, it follows that the producer sells at the lowest, and the consumer purchases at the highest rates; and, that the difference between the producing and the consuming prices goes, in part, to the merchant, the carrier, warehouseman and laborer; and, in part, to the capitalist, for the use of his money in effecting the exchanges.

It is obviously the true policy of every country to reduce the difference between the producing and consuming price of commodities to the lowest standard; for, on this depends, in a great degree, the prosperity of both producers and consumers. The most simple method of effecting this object, is, to place the producer and consumer as near to each other as practicable; and thus not only save the labor and cost of transportation, but, dispense with the many agents that are supported and grow rich by conducting the exchanges between distant parties. But, owing to a great variety of causes, both natural and social, the wants of civilization must always require the exchange of many commodities between distant parts of the earth; and hence the most effectual method of reducing the cost incident to these exchanges, is that of increasing the facilities for transportation.

It would be a waste of time to enter into an argument to convince the farmer that he would be benefited by an improvement that would enable him to send his crop to market and receive his salt, iron, &c., in return, for one-half the present cost: every intelligent individual is capable of appreciating the value of such improvements; and yet,

few possess sufficient individual enterprise or public spirit, to move in a matter in which all are so deeply interested.

One reason why the people of the West, especially those who have long resided here, do not take more interest in public improvement is, that they have no confidence in their ability to achieve any work that cannot be carried out by individual means. They seem not to comprehend the power of social combinations; and looking upon all schemes of improvement as being impracticable in the present condition of the country, they submit to the disadvantages under which they labor; and generally look to a change of location as the only means of improving their condition. This is more especially the case in Missouri, perhaps, than in any of the other Western States; and so long as our people shall continue to underrate their capacity to improve their condition, and, instead of making a manly effort, leave the country in search of new homes, the resources of the State must remain undeveloped, and the labor of her people comparatively unproductive.

It is folly to wait until we are more able to enter upon works of improvement before we commence; for there is little ground to hope for an accumulation of means so long as our present policy continues.

No country can prosper so long as its farmers and miners haul their products and imports on wagons over natural roads, a distance of from fifty to two hundred and fifty miles, while their commodities come in competition with those transported by steamboats, canals and railways. As well might one expect to prosper by weaving cotton sheetings on the hand loom in New England, or by hammering out nails on the anvil in Pennsylvania: and, hence, improvements in one part of the country increase the necessity of making them in others.

Believing that the enlightened people of Missouri cannot long remain blind, nor indifferent to these important truths, and trusting that the time is not far distant when a vigorous effort will be made to improve their present means of transportation; we have been attentive to the collection of facts relating to the different modes of improvement adopted by other States, to the end that our readers may be able to select such plans as are best adapted to our wants and to the means within our control.

The nature of the products, the climate and topography of a country, naturally indicate the kind of improvement most suitable to its condition. In Missouri, a thorough system will require the combination of railways—and of plank or turn-pike roads, connected with the improvement of our smaller rivers.

Railways are, doubtless, to be preferred for long lines, or for comparatively short lines, where the volume commodities or number of persons required to be transported are sufficient to give constant employment to locomotive power. But railways, canals, and navigable streams can never supply the wants of an agricultural country, so far as to dispense with the use of animal power; for almost the entire volume of agricultural products designed for market, must be moved from the place of production, in the first instance, by the producer, with his own teams; and, under the most thorough system of railway improvement, that can be expected to obtain in our State, a large part of the producers will be under the necessity of hauling their commodities from ten to twenty, and perhaps fifty miles, before they can be placed

upon the great thoroughfares of transportation; and hence the importance of improving the natural roads. And, as but little has been done in this branch of improvement in Missouri, it is our duty to institute a searching inquiry in regard to the best mode of constructing roads for the use of teams.

Until within a few years past, McAdams' method of constructing roads, with broken stone, obtained almost exclusively throughout the United States. This is doubtless a valuable and useful mode of improvement to the country in which they are located; but when we look to the small profits which they have generally paid to the stockholders, we are forced to the conclusion that McAdamized roads are destined to give place to some other plan of improvement that will be less expensive in construction, more profitable to the stockholders, and not less beneficial to the country at large. Indeed, the small profits derived from investments in these roads, afford a powerful argument against their utility; for, it would seem to be a just principle, governing every mode of improvement, that the profits of the stockholder should bear a reasonable proportion to the benefits received by the community. We regret that it is not in our power to give a complete statement of the dividends paid by all the McAdamized roads in the United States;—but if they have not paid better elsewhere than in Kentucky, they must be regarded, we think, as being greatly behind the age.

The following statement, from the report of O. G. Cates, Esq., president of the Board of Internal Improvement of Kentucky, shows that the dividends on the turnpike roads in that State, for the year 1849, were less than one and one-eighth per cent. on the investment:

(*See the following Table.*)

A Table showing the Turnpike roads in which the State is interested as a stockholder, their lengths, cost to the State, &c., &c.

	Length of road in miles.	Length of finished roads in miles.	Dividends of 1848.	Dividends of 1849.	Amount paid by the State.
Maysville, Washington, Paris and Lexington turnpike road,	64	64	$ 6,694 49	5 330 00	$213 200 00
Richmond and Lexington turnpike road,	26	26		3,779 15	75 383 00
Winchester and Lexington turnpike road,	18	18			45,100 00
Lexington to Covington, (three companies,)	85	73	1,510 00	1 963 00	200,405 77
Frankfort, Lexington and Versailles,	27	27	781 22	4,687 32	78,122 00
Frankfort to Georgetown, (two companies,)	17	17	581 00	616 00	58,725 00
Maysville and Mount-sterling,	50	22	1,519 00		88 072 59
Maysville and Bracken,	18	12			25 948 00
Lexington to Danville and Lancaster,	42	42	3,674 41	3,200 10	151 382 00
Hardinsville to Crab Orchard, (four companies,)	65	65	1,568 41	3 056 55	183,113 00
Frankfort to Jefferson county line, (two companies)	32	32	3 149 17	2,432 78	65 000 00
Louisville via Bardstown, to Tenn. line, (three companies)	144	103	4 000 00	4,500 00	500 210 57
Louisville via Elizabethtown, to Tenn. line, (four companies,)	143	108	570 00		441,383 25
Logan, Todd and Christian turupike road,	76	17			149,428 91
Muldrow Hill turnpike road and bridge,	5	5	170 00	475 93	55,145 46
Springfield and Bardstown,	18	18			65,190 60
Versailles and Anderson county,	12	6			20 000 00
Lexington, Harrodsburg and Perryville,	42	42			109,646 00
Owingsville and Big Sandy, dirt road,	78	78			168,783 83
Total,	962	775	$24,217 70	$30,040 83	$2,694,239 98

Revenue in 1837,	$3,992 13	Revenue in 1845,	$28,262 22
Revenue in 1838,	5,040 54	Revenue in 1846,	28,531 55
Revenue in 1839,	7,576 37	Revenue in 1847,	26 980 96
Revenue in 1840,	9,471 36	Revenue in 1848,	24,217 70
Revenue in 1841,	17,117 75	Revenue in 1849,	30,040 83
Revenue in 1842,	13,632 54		$237,581 50
Revenue in 1843,	19,683 33		
Revenue in 1844,	19,931 22		

It will be observed, that the highest dividend paid by any of the Kentucky roads in 1849, was six per cent.—this was on the Frankfort, Lexington and Versailles line, twenty-seven miles in length. This case simply proves that on great thoroughfares short lines may pay a reasonable profit; but does not sustain the idea that even short lines will pay where they are located merely for the purpose of accommodating the trade and travel of a limited district.

These discouraging facts relating to McAdamized roads, and the necessity of improving highways for the use of animal power, have occasioned much inquiry in respect to the cost and utility of plank roads. These inquiries are especially pertinent in Missouri at the present time. Five McAdamized roads have been projected from the city of Saint Louis, leading in different directions: and, although short sections have been completed on each, yet, it is not too late to change the mode of construction, provided, that, upon a thorough examination of the subject, it should be found to be the interest of the community to do so. Much will depend upon the success of these roads: if they should be completed upon the present plan, and be found unprofitable, they will probably be superseded in a few years by some other mode of improvement, and the investment, in part, be lost to the county. But, should these roads be constructed with plank, and prove to be cheaper and better than stone roads, the result would be the means of encouraging the plank road system throughout the State.

In our leading articles, we have hitherto avoided the discussion of local subjects; but we have been induced to notice this, because, notwithstanding the work is local, yet, it is intimately connected with the general interest of the country; and, for the additional reason that we have received a communication on the subject, from the Hon. O. Williams, one of the Judges of the county court, in which he seems to incline in favor of prosecuting the work according to the original plan. In comparing the merits of stone and plank roads, the Judge says: "if rock and lumber were equally convenient, I would make rock roads; for rock is a living substance: when almost every thing else gives way to time, it is still found solid: neither moth, rust, nor decay is found on it; and a little more of that living substance, applied in due time, keeps the road a living one for centuries. When, every ten or twelve years, the plank road will have to be made anew, which will cost more than the original construction of the rock road; and more than double the cost of keeping the rock road in repair." The cost of roads, whether of rock or plank, must be governed in all cases, in a great measure, by their particular locations; but is susceptible of being estimated with almost perfect accuracy; and, when the quantity and price of the necessary materials and labor are known, there is no difficulty in making the calculation. The communication to which we have referred contains a number of tables, showing the cost of a plank road in St. Louis county. By the table, in which the author estimates the plank at $1 50 per hundred feet, he makes the materials upon the ground cost $5,227 20 for each mile. His road, however, is twenty-two feet wide—this width we do not esteem necessary for any road required in St. Louis county.

A writer in the American Railroad Journal says: "a double plank track will rarely be necessary. No one without experience in the

matter can credit the amount of travel which one track can accommodate. Over a single track near Syracuse, 161,000 teams passed in two years, averaging over 220 teams per day, and during three days 320 passed daily." It is scarcely probable that as large a number of teams would pass over either of our roads, at least for many years to come, and when ever the time arrives that a double track shall be needed, the tolls will soon pay for enlarging the capacity of the road. A plank track eight feet wide is the width which seems to be most approved by those experienced in constructing plank roads in the United States. And without entering into estimates, we conclude that a plank road of this width will cost much less than a stone road in St. Louis county. But the cost of construction is not the only point of view in which the subject should be considered. We have what we esteem good authority for affirming that the same team can haul at least fifty per cent. more on a plank road than upon a common turnpike.

This is an advantage that the projectors of our roads seem not to have taken into consideration, or, sufficiently appreciated. This difference in the cost of transportation would, of itself, be worth more to the city and county of St. Louis than the entire cost of all the five roads. It would impart a value to fire-wood, building materials and other heavy commodities, in distant parts of the county, where they are now worth nothing; and would tend to cheapen and make more certain the supply of fuel in the city. And, besides this, the comfort of traveling upon a plank road is a matter worthy of serious consideration. Our broken limestone is rapidly reduced to an impalpable powder, by the passing of wheels over it: and, rising into the atmosphere in dry weather; it remains suspended over a road that is much traveled, all day, and is considered highly injurious to the lungs of those who breath it. Owing to this cause McAdamized roads will offer little inducement to the people of the city to travel on them for exercise and health; and on this account will be less profitable.

We have been encouraged to make these suggestions by the tenor of Judge Williams' communication, from which we infer that he does not consider it too late to change the plan of constructing our county roads, provided the court should be convinced that the public would be benefited by the change. We trust, therefore, if not indeed too late, that the court will take the subject into consideration, and carefully compare the two modes of improvement before proceeding farther with the work. The simple fact that the people of those States who have had most experience in matters of internal improvement have abandoned the construction of turnpike and adopted plank roads, should, of itself, have great weight upon the minds of those who give direction to our works of improvement.

We feel the fullest assurance that the change we have suggested would meet with the approbation of a large majority of the county; and, were our citizens fully enlightened upon the subject, we should expect to see them urging upon the county court a change of the present plan of improvement, even though nothing should be saved by such a change in the cost of the work.

In another part of the present number will be found a valuable article on the construction and cost of plank roads, which we commend to the perusal and consideration of our readers.

From De Bow's Commercial Review.

ART. II.—THE MANUFACTURE OF SUGAR.

(*Concluded from page* 25.)

PART SECOND OF MR. MELSEN'S NEW METHOD OF EXTRACTING SUGAR FROM CANE AND BEETS, TRANSLATED BY THOMAS G. CLEMSON, UNITED STATES CHARGE D'AFFAIRES AT BRUSSELS.

But, while I was naturally tempted to confine all my attention to sugar-cane, which promised me a success incontestible, quick and easy, I felt that I owed it to my native country which has no colonies and which cultivates the beet on a large scale—and to my master, who, on so many occasions, has aided the cause of native sugar—to endeavor, by every means in my power, to maintain the equilibrium between beet and cane-sugar, which the results I had obtained threatened to overthrow. This is the point I aimed at in my reiterated experiment on the beet.

As the extraction of sugar from the cane requires crushing or grating, defecation, slow or rapid evaporation and filtrations, it is very easy, from this, to form an idea of the evaporations necessary for the beet. There is, in reality, little difference. But, if the sugar-cane offered results so clear that there was no doubt on my mind of the advantages of the process I tried, the beet presented much greater difficulties to be overcome.

Our sugar manufactories are much more advanced and leave much less room for improvements. As the extraction of the juice is more perfect, there is a smaller loss in the pulp. As the pulp is used for the food of cattle, the sugar it contains is not in reality lost. Having coal very cheap, the process of evaporation by fire suits better. Finally, the juice of the beet containing a considerable quantity of salts, which prevent the crystalization of the sugar, there is a cause of loss which the new process cannot correct.

The calculation, in round numbers, appears to be this: a hundred kilogrammes of beets contain, one year with another, ten kilogrammes of sugar, one kilogramme in the pulp, two in the molasses and seven that the manufacturer can sell in the form of unrefined sugar.

Some manufacturers, they say, reach this quantity; but I should be disposed to think, even in France, where this industry is so well understood, the general product does not exceed six kilogrammes; from which there results absolute loss of one per cent. of sugar, which disappears during the operation. However this may be, I consider as the limit of all that is to be hoped from my process for the moment, a yield raised to eight per cent., or one-fourth which would be thirty-three per cent., above the general yield, taking one manufactory with another.

But I have sought less to give the large beet-sugar fabrics more perfect processes of fabrication, than to furnish means which can be easily employed by all, and are capable even of being used on a smaller scale on the farms themselves.

While I was studying the question in this point of view, Messrs. Claes were using, without my knowledge, processes of the same

nature on a large scale. It is for them, consequently, to make known the results. For myself, as I have not yet had the means of judging of the operation of my method with the aparatus actually existing in the sugar manufactories, I can only give the results of my experiments in the laboratory.

First point to be considered. Can all the sugar contained in the beet be extracted? This cannot be doubted.

Washing the pulp with water charged with the bisulphate of lime is an operation entirely in the scope of a manufactory, and, done systematically, will give a liquid very like the juice itself, and containing nearly as much saccharine matter, and leaving the pulp very nearly, if not entirely, exhausted.

The washings thus obtained might be thrown on the grater, to preserve the new pulp from fermenting.

For the exhausted pulp, I am not ignorant that it is considered injured as food for cattle by this extraction of all the saccharine matter. This, experience will decide; but I should be inclined to doubt that this pulp, which, after the washing, is still so rich in azotized and other similar matters, can have lost its alimentary properties. Exhausting the pulp, and afterwards adding to it the molasses which would give it the sugar and the salts it needed, would seem to me a reasonable and logical operation. Experience alone could decide what quantity of molasses could be supported by the cattle.

What I wish to prove, is, that the exhaustion of the pulp is very easy, in itself considered, when a liquid can be used which prevents all alteration and fermentation, and permits as much time as is necessary to be given to the operation.

The absolute loss of one per cent. of beet-sugar, or of ten per cent. of the original saccharine matter, is not, I am convinced, exaggerated. It is, I think, really under the truth, and on this point I do not doubt considerable amelioration may be obtained.

From whence comes this loss if it is not from the scum, in the animal black, and in the filters or from the loss from fermentation? The employment of my process prevents these losses. As to the animal black, its consumption will be much reduced in the refining of common sugar. As to the scum, the bisulphate has a double action, the importance of which I do not think I exaggerate. It determines more easily and more completely the coagulation of the albuminous substances which form the scum; besides which, it produces a scum on which the air has no effect, and which does not ferment. If the operation on a large scale causes difficulties in this respect that I do not perceive, the addition of a few milieues of the bisulphate would suffice to prevent them.

It is plain, that to prevent fermentation in the sacks, filters and instruments employed, it is sufficient to wash them with water charged with the bisulphate before and after using, as Messrs. Durbunfaut & Kuhlman have already devised.

From all this, I concluded that a well-directed use of the bisulphate of lime will enable us to extract the sugar heretofore left in the pulp, and prevent losses by fermentation. If the removal of these two causes of loss or of destruction adds two or three per cent. of sugar

for the ten contained in the beets, the operation is not without interest. I will now speak of another cause of loss. This is the presence of the salts, which are considered as being the principal causes of the formation of molasses. I have observed all the inconveniences that are attributed to the action of the various and abundant salts contained in the beet. With the sugar cane, a small portion of the bisulphite is all that is necessary, for the washings give results as exact as if alcohol had been used. The reason is, that there are little or no salts in cane juice. With beet juice it is another thing.

However this may be, the treatment by the bisulphite always differs from the treatment by alcohol, precisely because the water of the juice dissolves the salts, while the alcohol does not. It is rare that the crystals of beet sugar can be obtained in distinct form, and they are difficult to produce. On the contrary, sugar-cane gives crystals, perfect and easily formed. Therefore, there has generally remained if not molasses, soft sugar in treating beets.

Admitting, however, the incontestible influence of the salts on the crystallization of sugar, I cannot accept it as the only cause of the formation of molasses, or soft crystals. If this was so, in evaporating forty litres of juice and burning the residue, and adding the salts thus obtained to ten litres of juice, this juice ought not to furnish crystalized sugar. Now, it is very easy to ascertain that this quantity of the salts contained in the beet would not have such an influence.

The production of molasses must, then, be attributed to other causes, independent of this. It would, therefore, be inexact to say, that a process which did not destroy the salts must, for that reason, be without influence as regards the formation of molasses. All my experiments prove the contrary. I have never been able entirely to prevent the formation of molasses, but all the manufacturers are convinced that I have reduced it to a much smaller quantity than the operations employed have succeeded in doing. They may, I believe, with confidence, continue their efforts in the same direction.

I have been assured that, in some of the French sugar fabrics, directed by persons of great experience, the yield of sugar has been carried to eight per cent. of the weight of beets (about one fourth). This result confirms fully the opinion at which I had arrived at by my own researches. I shall be happy if I succeed, by the certainty of my process, in enabling all to do what it has, as yet, been in the power of but few to accomplish.

I shall, at present, endeavor to reply to some questions of great importance to large manufacturers. I shall do so with sincerity, leaving operators and men of business to decide what my opinions are worth in that respect.

The manufacture of sugar has taken such a start in certain parts of the continent, that it has given rise to establishments specially devoted to the fabrication of machines used in it, and also for making and restoring the animal black it consumes. There are also distilleries for the consumption of the molasses, from which they extract the salts and the alcohol contained, with profit to the country. All these industries are uneasy.

If the use of bisulphite be adopted, the new conditions which it will introduce may open new vistas to invention, which I cannot fore-

see. It seems to me, however, that graters will be always necessary at least until the effects produced by washing the sliced beets obtained from root cutters shall be more studied. It has even seemed to me, so far, that the juice obtained by macerating or soaking was more easily operated on than the natural juice coming directly from the presses and graters.

I do not dare say, certainly, that the presses actually in use will be preserved, even if the graters are. They are calculated for very rapid operations; but once the juice is rendered unalterable, slow presses, operating on large masses, economizing labor, suppressing the sacks and the racks, may offer certain advantages and obtain a just preference. Defecation, by means of the bisulphite, being carried on in the same manner as when lime is used the boilers for this operation will continue indispensable.

The Taylor filters, or those of the same kind, will be as much needed in the new as the old process, unless it be found practicable to operate by deposit, which is possible.

The apparatus for evaporating by fire might be used in the commencement of the concentrati n of the juice, but toward the end it would be necessary to have recourse either to rapid crytalization by means of boilers heated by steam, or to slow crystalization by means of stoves. I am sure that either sheet-iron, cast-iron, tinned-copper or tinned-iron, and probably reservoirs constructed of wood or bricks covered with cement, may be used.

The use of animal black may be either suppressed, reduced, or continued, according as it may be desired, to manufacture refined or unrefined sugar.

As to the molasses and the salts contained in it they might always be employed, except the portion that was thrown on the pulp for the nourishment of cattle.

Agriculture, in France, requires a quantity of marine salt. It would be much more reasonable to desire salts having potash for base. Now, when it happens that, in a country like the northern department of France, where nothing is lost, and where there is such an abundance of these salts in the molasses, and when it is only necessary to give this to the cattle, in order that these salts should be returned to the earth in the form of manure, it is to be supposed they will soon find reason to cease the exportation of molasses and the salts obtained from it, of which they may be said to rob their land. Countries which produce sugar may export as much of that product as they desire, with impunity. Air and water return the elements, but the salts contained in the molasses, once carried away, are not so easily found again.

To exhaust the pulp of all the crystalizible sugar contained, and return a portion of the molasses with the salts it contains, would be, in my opinion, the most reasonable proceeding, taking into consideration the general economy of the country. But, in order to render this method acceptable to private interest, it is necessary that they should find an immediate profit. To do this, there should be a greater profit in extracting the sugar from the pulp than in selling the molasses.

Pratice, on a large scale, can alone prove whether this advantage exists, as I think it does.

The indications which I have given above will render easy, to every one interested in the different industries connected with the manufacture of sugar, the appreciation of the facts that I have proved myself in the treatment of the beet.

I grated beets, and watered the pulp with two and a half per cent. of the weight of the roots of a solution of the bisulphite of lime. I pressed the pulp and collected the juice which I boiled. I clarified it and passed through a cloth strainer, and analysed it by means of the polarizing apparatus. I concentrated by boiling the clarified juice to the consistence of a syrup, which was filtered and placed in a stove, where it formed crystalized masses of a straw color, and the crystals were also examined by the polarizing apparatus.

The analysis of this humid mass, thus made, enabled me to determine the portion of its weight corresponding with true sugar, the rest being represented by water, salts, &c. Four litres, 356 of juice, containing 521 grs., four of saccharine matter, gave a crystalized mass, containing 528 grs., two of sugar. 0 litre, 984 of juice, containing 105 grs., 3 of saccharine matter, gave a grained mass containing 104 grs., 9 of sugar. One litre, 045 of juice, containing 112 grs., 4 of saccharine matter, gave a grained mass containing 113 grs., one of sugar. By which it is proved that, during the defecation, the first concentration by boiling upon the naked fire, the second concentration in an oven, and the crystalization which was produced the sugar treated by the bisulphite is preserved without loss or alteration.

In all my experiments the same exactitude was manifest. The differences always small, sometimes in one sense, sometimes in another, were not generally more than two or three hundredths, a quantity too small to be appreciated in practice.

The pulp, being steeped in water and pressed a second time, yielded again a sweet liquid: washed again, the liquor was not perceptibly sweet. A little bisulphite was added for the last washing. These liquids, mixed together and treated as before, yielded crystalised masses exactly similar to the first. The sugar in these masses corresponded in weight with what the analysis gave in the liquids that furnished it.

The scums and the sacks, washed in their turn in water charged with a little bisulphite, furnished, notwithstanding, their exposure to the air, rinsings, which were left for ten days, and all that came from the experiments of each day, was added. At the end of this time it weighed four and a half (Baume). They were treated by defecation, &c., like the beet juice itself, and the result was crystalised masses, almost equal to those obtained directly from the beet.

During the long time that I was engaged in making these experiments, I treated beets of all sizes and colors: red, yellow, white—of every age, young and not arrived at maturity, decayed, as well as those that were perfectly sound. In every case, the crystalised mass that I extracted contained the sugar, unaltered, that previous analysis had indicated. The differences observed were to be attributed principally to physical causes, for the sugar obtained did not always present the same aspect. Beets rarely gave as fine products as sugar-

cane. Instead of a firm and well-formed grain, the solidified masses had confused crystalization.

Chemists and manufacturers, who are accustomed to manipulating, the excellent method of assaying given by Mr. Payen, may convince themselves by a very simple experiment. They have only to treat a dozen beets by the bisulphite, and evaporate the juice after defecation, first to 25° of Baume. At this point clarify and filter, or even filter without clarification; evaporate afterward to 37° or 38° of Baume, and leave it for three or four days in an oven, at forty centigrade. The crystalized mass, well pressed, will give an unrefined sugar of a fine color, and of a richness in sugar not only theoretically but practically realizable (as the assay by Mr. Payen's method indicates), which will surpass the yield of all the operations of sugar manufacturers.

But whoever tries to treat beets by the bisulphite, will soon discover that there may be extracted from the juice they yield, from thirteen to fifteen per cent of the weight of this juice, of a thick residuum, which, well pressed between folds of filtering paper, leaves from seven to ten per cent. for the weight of juice of white sugar.

After having been present at the first of my experiments, which took place before the French committee, Mr. Clerget, one of its members, in his first experiment made with my process, arrived at the same result.

The syrup boils up very rapidly when the bisulphite is used, but this inconvenience may be easily remedied by employing a little grease; or, what is better, oleic acid. I was not able to account for this fact. It would seem that this phenomenon required that another form should be given to the vessels used for evaporating the juice, especially when it came from unripe beets.

I found that my process enabled me to extract sugar from defective and decayed beets as well as from those that were sound. The product differed little in appearance, and the quantity indicated in the beets was found entire in the crystalised masses obtained.

In comparing the well known practice of the fabrics of beet sugar now in operation, with what seemed to be the results of my process, I perceived the following circumstances: The grating of the pulp is done at present in the open air, without any special precaution. The alterations to which this gives rise render a rapid pression indispensable; but, however rapid this may be, it cannot entirely obviate the difficulty. The defecation by means of lime, does not prevent, but even increases, the discoloration, and renders the employment of animal black necessary as a bleaching agent, and an absorbent of the excess of lime. Evaporation at a high temperature, modifies a part of the sugar, which heat renders uncrystalizable, from which results the necessity of operating by several successive boilings, and the solid sugar is extracted in four or five crystalizations, less and less productive.

By my process the beets may be grated some time in advance, and the pulp of the day before may be slowly pressed several times, and exhausted by washing. The defecation, leaving the juice limped and colorless, renders the employment of animal black useless.

The juice evaporated first at an elevated temperature, to the density of about 1.3, then concentrated in an oven, crystalizes without

color, and solidifies almost entirely, which gives almost the entire product in the first operation.

I was, therefore, always brought back to the employment of the process of slow crystalization, to which Mr. Crespel-Delissse owed the success which saved from ruin, the fabrication of indigenous sugar in France in 1827. In adopting it I felt sure, that, by the employment of the bisulphite, this process had become much more simple and easy, and that the yield would be much more increased.

I was stopped by my two difficulties :

Would cattle eat the pulp treated by the bisulphite, and would it not be injurious ?

Would the purified sugar offer any special difficulty in refining, or prevent any cause of depreciation in the consumption ?

It was not possible to decide this question in the laboratory. It requires the manufactory on a large scale, to arrive at certainty.

I had arrived at this point, when Mr. Paul Claes, manufacturer of beet sugar at Lembecq, came to Paris, as one of the committee charged with a special mission by the Minister of the Interior of Belgium to give an account of the results of my researches. He commenced by telling me, with his well-known frankness, that he had himself tried a process that was probably analagous to mine, but that, in case of coincidence, he acknowledged that by the deposit of two sealed packets made by me in the archives of the Royal Academy, of Belgium and the French Institute, assured my priority.

He gave me in writing the results of his operations in the following terms :

We treated at Lembecq, by sulphurous acid, nearly 2,500,000 kilogrammes of beets, in the last year.

The liquid sulphurous acid at 4 1-2 Baume, diluted with two hundred times its volume of water, was poured upon the grater.

The beet juice was clarified by lime at about 60°. Chalk was added ; very large lumps were obtained. The clarified juice was almost without color. During the whole operation no discoloration was discovered that could not be traced to extraneous causes.

The quantity of sugar extracted was greater than usual. The color, without claying, finer ; the grain finer and richer. This sugar, resembling in every respect, the finest sugars made, was most favorably received in commerce. Some time afterward Messrs. Claes and brothers, sent me the fourth products refined and the fifth unrefined, which fully justified the preceding assertions.

My joy was great, I avow, in learning, on one hand that sugar treated with sulphurous acid could be easily refined, and offered no difficulty to consumption, and to know that the pulp of 2,500,000 beets, treated with sulphurous acid, had been eaten by cattle without difficulty.

The question of the yield, in comparison with what it had been before in each fabric, yet remained to be decided. It was sufficient for this, that I found it had been increased at Lembecq by the use of sulphurous acid.

Mr. Paul Claes thought, with me, that the direct use of bisulphite of lime was preferable to that of sulphurous acid.

Up to this time, my researches had been pursued in the calm of the laboratory, but one cannot touch with impunity questions connected with great interests,

The results of my experiments had transpired. The manufacturers of the Northern Department of France became uneasy. The Colonial Delegates addressed themselves to the Minister of the Marine in France; and, at their request, the French Government named a commission for the examination of my process. The silence so long guarded by the Belgian Government was necessarily, broken.

In its first sitting, the French Commission decided that it was necessary for the security of my operation that I should have a patent. I immediately took out one, as a means of preventing individuals from paralyzing my efforts and those of the government. We wished the French and Belgian manufacturers to enjoy the advantages of my process.

To judge of the value of a new system, in a fabrication like that of sugar, it is necessary to make a series of experiments at different epochs on a sufficiently extended scale.

I publish at present, therefore, this first memoir, in which I have sought to establish, precisely, the essential facts; and I entreat all the French and Belgian manufacturers, who think it comports with their interests, to make, during the year, a series of experiments, either on the cane or on the beet, making what use they please of the processes which they find described here. I shall be pleased to receive their communications. What I seek is the truth. When my experiments have been verified as I desire, all the world shall have the proof.

I wish to insist on one point. The bisulphite, poured upon the grater during the first operations of manufacturing, renders the juice unchangeable. It permits the maceration of the pulp, and its second pressure after having steeped it in water. It corrects the bad condition of the beets toward the end of the season and renders the fabrication uniform and regular. Let it be essayed in these conditions, in confining its employment to that of a preservative. The capabilities of the manufacturers and the workmen will do the rest. This new process will become gradually familiar, and it will be easier to seize the most favorable conditions for its employment.

If, contrary to my supposition, the manufacturers of native sugar and no profit in the employment of my process, I shall not for that reason believe that no further benefit can be derived from it in our climate. When all that is necessary to extract easily from a thousand kilogrammes of beets and to produce finer and whiter unrefined sugar than that now supplied is a root-cutter, one or two barrels, and a boiler, such as is used in washing, with a few earthen vessels, is it not to be hoped that the always increasing consumption of sugar will render popular its fabrication throughout the country, and bring in its train all the benefits of the culture of the beet. Thus the wish of Morel Vinde may be soon fulfilled.

At the same time, agriculture will gain one of the greatest fertilizers and the laborer the consumption of a healthy article of food, at present unknown to him. For, while England consumes more than ten kilogrammes of sugar per head in the year, the whole of the rest of Europe does not consume more than two and a half kilogrammes per person in the same time.

Whatever may be the method of operating on a large scale, I cannot sufficiently dwell on the importance of the application of the preserv-

ing bisulphite to the juice the moment it comes in contact with the air.

For the rest, it is easy to understand that, taking the facts and principles I have given as a base, those employed in manufacturing may put them in practice in various forms. Hereafter I will publish the comparative results of the essays I hope to be able to continue. I will confine myself to indicating here some of these forms.

1st. Defecate the pulp itself.

2d. Defecate the juice from the presses, or from the washings, by means of the bisulphite of lime alone. Filter, through Taylor's filters, and draw off clear after the defecation. Boil directly this limpid solution, notwithstanding it becomes troubled during the concentration.

3d. Defecate by the bisulphite of lime; filter or draw off; evaporate to 25° Baume; filter; carry the concentration no further than about 38 Baume. Crystalize slowly in an oven, by the method of Mr. Crespel-Delisse.

5th. Put on the pulp a weak dose of bisulphite to preserve it; defecate in the ordinary manner by lime; filter, or use animal black; add bisulphite sufficient to obtain a neutral or slightly acid liquid; evaporate to 25° Baume; filter and boil.

In all these cases good results would be obtained by returning the syrup that runs off to the boilers for defecation, but it must be understood that this operation cannot be repeated more than a few times.

6th. Defecate by the bisulphite; filter or draw off; concentrate the juice to about 25° Baume; neutralize it, or render it slightly alkaline; make use of animal black, and afterward proceed by the old methods.

7th. Pour upon the grater a weak solution of the bisulphite; defecate with lime: operate afterward in the usual manner.

Before finishing, permit me to recall, in a few words, the experiments of learned men, or practical manufacturers, who have preceded me in the work I am engaged in.

We have all taken our point of departure from Proust, whose name will always be honorably connected with the history of sugar.

Independent of the well-known use he made of the change operated by the sulphite of lime for the extraction of grape sugar, this illustrious chemist indicates, in the Journal of Physic for 1810, the application of sulphite of lime for the juice of the cane, the maple, &c. It is to him, then, that is due all the honor of the discovery. Sooner or later his opinion must triumph. My happiness will be to have disengaged it from some difficulties, and to cause it to be accepted in practice.

Some experiments followed this indication. Mr. Drapier, in 1811, employed sulphurous acid. Mr. Peppre failed in 1815, in his essays with the same acid.

Mr. Jordan de Haber recommends the use of sulphurous acid for clarifying, but he employs, without distinction, sulphurous and sulphuric acids of lime.

Mr. Boulin took a patent for the employment of sulphite of alumine in 1846. The use of this salt had been already indicated by Mr. Stolle, in a patent taken in 1838.

Mr. Merge took out a patent for the use of sulphurous acid and the sulphuret of calcium, which had been already proposed by Mariet de Reins for grape sugar.

In this rapid enumertion I purposely omit two patents, which give a full description of the employment of sulphurous acid and the sulphites—one by Mr. Dubrunfant, dated 1829; the other by Mr. Stolle, dated 1838.

No one will suppose, I am sure, that I had the intention of setting aside the experiments of a person so worthy of consideration as Mr. Dubrunfant. One thing astonishes me, which is, that his penetration did not enable him to discover the reason of the failure of several of his processes.

The patent of Mr. Dubrunfant is printed in volume twenty-seven, of the collection of expired patents. Instead of discussing it, I refer the reader to the patent itself.

The patent of Mr. Stolle is printed in the collection of expired patents, volume sixty-seven. Manufacturers and chemists will appreciate at once where Mr. Stolle and I differ. They will give their just value to the points we start from, and will see upon what facts we base our theories.

For the rest, far be it from my thoughts to give myself the credit of the application of the principle of change to cane and beet sugar. I acknowledge that the credit of all belongs to Proust, and that we have only followed him. There remained something to be done to render practical the happy and original idea of this great chemist in the manufacture of cane sugar, as well as that of the beet. If I have succeeded in this, I am willing all the honor should be given to Proust.

NOTE.—The translator is not only struck with the importance of the above discoveries with reference to the cane and beet, but cannot help thinking that they may be applied with success to the extraction of sugar from the stalk of the Indian corn. T. G. C.

ART. III.—OSAGE RIVER.*

To the Editors of the Western Journal:

You are aware that a Board of Internal Improvement was established by authority of the Legislature of Missouri in 1839, and that during its existence examinations and surveys were made of the

*We are indebted to Thomas Allen, Esq., for the following extract from the Report of the Board of Internal Improvement of Missouri. It is the more acceptable at the present time, for the reason that it contains many interesting facts relating to that portion of our State bordering upon the route of the Pacific Railway. We entertain the opinion that the commerce and travel between the valley of the Osage and St. Louis will, of itself, be sufficient, in time to pay fair dividends on the investment necessary to construct the road to that region. And when we contemplate the extent of country situate West and South of this line of road—all of which must look to St. Louis as its principal market—we feel fully persuaded that no route on the continent offers stronger inducements for the investment of capital. EDITORS.

Osage, the Meramac, the North Grand, and the Salt rivers, of this State, and a route for a railroad was located from this city to the Iron mountain. A report was made to the Legislature in 1840 by this board, embracing the results of these examinations, accompanied with plans for and estimates of the cost of the improvements of these streams, and of the construction of the railroad to the Iron mountain. This report, though printed by the State, and of considerable interest, seems to be but little known at the present day, and very few copies of it are to be found. There are portions of it, which, for more general information, for convenient reference, and as especially relating to parts of the State lying in or near the projected route of the Pacific railroad, I herewith transmit to you for republication in your valuable Journal. These portions, to which I allude, relate to the Osage river, the Meramac river, and to the Iron mountain railroad. And firstly, I ask you to republish the following extracts from the portion on the

OSAGE RIVER.

The point at which the survey of this river was commenced, at the town of Osceola, is about two miles below the mouth of the Sac, a tributary which has its source near the southern limit of this State, and which, at its confluence with the Osage, is of the same apparent size as that stream. The Osage proper has its source far beyond the boundary of this State, in a direction westwardly from the point where it receives the Sac. The extent of country drained by the Sac is 2052 square miles, and of that by the Osage fork, is 1332 square miles within the State, besides a vast country of undefined extent beyond its western borders. The main swell of these two streams is rarely coincident. The Sac rising far in the south, contributes its succession of waters, at the breaking up of winter, in advance of the rise, on the western fork, and, during the other wet seasons of the year, the great extent of country drained by these streams, and the remote points in which they have their source, preserves to the river, below their confluence, for a long period a nearly uniform quantity of water. The most important tributaries that afterwards unite with the Osage, are the Pomme de Terre, and Grand rivers above the town of Warsaw, and the Niangua, sixty-four miles below it. These tributaries, though large, do not appear to add much to the permanent volume of the stream; they do indeed, by local rains, occasionally produce a rise, which soon subsides, their chief utility consisting in replacing the waste of the river from evaporation and filtration. To this purpose, the Niangua is admirably adapted, its main supply being a few large springs, which gush out in perennial rivers.

The right bank of the river Osceola, is limestone rock—the left alluvial bottom, both reach above high water, and their steepness is such as to occasion but little variation in the surface width of the river during its various fluctuation. This width, where the survey was commenced, and when the river was stated to be at its ordinary stage, was 317 feet, and the depth 7.7 feet, with a current moving at the rate of about two miles per hour. This characteristic of alluvial bottoms on one side, and rocks and bluffs on the other, is preserved, with few exceptions, to the mouth of the river.

The bottoms are narrow, generally elevated above high water, and are composed of sand, gravel and alluminous matter, combined in such a manner as to form banks of such permanency as, in most cases, effectually to resist the action of the river. The rocky banks with which these bottoms alternate, and which occassionally rise into perpendicular bluffs of from 50 to 250 feet elevation, are of the tertiary formation of Bakewell, and are generally silicious limestone with occasionally large masses of sandstone; and the deposits which are brought into the river by its tributaries, are detritus from these rocks, with small angular fragments of silicious rocks which abound upon the ridges of the interior and which are also more or less intermixed with the soil of the prairies. These deposits whether brought into the river by its tributaries, or derived from the abrasion of its banks, appear to be very stationary, the force of the current of the river not being sufficient to put them in motion after they have once subsided in it. The obstruction to the navigation of the river consist of shoals formed by this description of material, which give to the bed of the river where they occur, great stability, and force it at high water to widen its channel by encroachments upon its alluvial banks, the coarser and heavier particles of which are added to the shoals already in existence, while the lighter ones are deposited where the water is less rapid and accumulate into islands by which the water in the river becomes temporarily divided. At these points in low water, the greater part of the whole fall in the river is accumulated, thus dividing it into a succession of pools and rapids. The river in these pools has a depth of from three to twelve and fifteen feet, with a current scarcely perceptible; while at the shoals, it is either spread out in a thin sheet of great rapidity, or divided by the Islands, so as to afford in neither channel sufficient water for the purpose of navigation. In addition to shoals of this description there is an obstruction known as the Rock rapids, where there is a fall of 1.63 feet in a distance of 200 yards, with a minimum depth of water of 3.3 feet. The difficulty here does not consist so much in the shallowness of the river as in the rapidity of the current and the agitation of the water occasioned by masses of detached rock distributed through the channel. As the mouth of the river is approached, the character of the bottom land, and of the deposits, is also changed to some extent, there being more alluminous matter and less gravel entering into this formation. Owing to the general stability of the banks, the obstructions from snags are not numerous; but, at a few points where this stability is wanting, the undermining of the river has occasioned a considerable accumulation of them. These will have to be removed; and to prevent further encroachments of the river, the banks must be protected by rock. The overhanging trees that have necessarily to be cut, are few; and should the plan proposed for the improvement of the river be executed, they will all be wanted in the prosecution of that work.

DIVISION 1.

Number of shoals between Osceola and Warsaw, -	25
Aggregate length of do. - - - - - -	10,500 yards.
" fall " do. - - - - -	27,51 feet.
Total " between do. and do. - - -	54,13 do.
" distance " do. and do. - -	58 miles 1000 yards.

DIVISION 2.

Number of shoals between Warsaw and mouth of Niangua,	30
Aggregate length of do. - - - -	14,200 yards.
" fall " do. - - - - -	33,42 feet.
Total " between do. and do. - - - -	49,61 do.
" distance " do. and do. - -	63 miles 1000 yards.

DIVISION 3.

Number of shoals between Niangua river and mouth of Osage,	43
Aggregate length of do. - - - -	19,350 yards.
" fall " do. - - - - -	47,75 feet.
Total fall between do. and do. - - -	58,42 do.
" distance " do. and do. - -	108 miles 621 yards.

Minimum volume of water per minute, 131,000 cubic feet. Maximum range of river from high to low water, according to freshet in 1837, 27 feet, do. do. during survey in 1840, 22 feet.

The extent of territory, within this State, that will be directly benefited by this improvement cannot be less than 18,000 square miles, a large portion of which is prairie of good quality, the more westwardly part being represented as unusually productive, as is also the valley of every water course throughout its whole extent. The eastern section, or that nearest the mouth of the Osage, is generally covered with timber its surface is very irregular, and with the exception of the narrow bottom lands of the river and its numerous tributaries, is but illy adapted to agricultural purposes. For this deficiency in agricultural capability, there is, however, an abundant recompense in the very general diffusion of ores of lead, in the richness of the bottom lands, and the extended range for stock which those parts too rugged for cultivation will always furnish.

The inducements which the variety and excellence of this section of country hold out to industry and enterprise, have drawn to it a large portion of the emigration that has come to this State, within the last few years; and the home demand for articles of agricultural production, consequent upon this emigration, together with the difficulties and privations to which the pioneer is always subjected, have, in a great degree, prevented him from turning his attention to the immense hindrance to his prosperity, that exists in the heavy charge and expenses to which every article requiring transportation is subject. His salt and his iron, articles of indispensable necessity, and those other heavy articles of sugar and coffee, which, to an American farmer, are, from habit, of almost equal necessity, come to him so much enhanced in value by the cost of transportation, as to absorb the products of his industry, diminished as they are in exchangeable value by the same cause. This expense of transportation is as essential an element in the consideration of the value of lands, as the quality of the soil; and it becomes important to enquire more particularly into what, in this respect, is the present condition of this region. In doing this, it will be placed in as favorable a point of view as its true position will warrant, by assuming Warsaw as the central point at which its exchanges of product for supplies are effected. This town is situated on the Osage, one hundred and seventy-two miles above its mouth, and seventy-five miles from Boonville, which is the nearest shipping port upon the Missouri. The distance from

the mouth of the Osage to Boonville is, by the river, about seventy miles; but the charge for freight from St. Louis to either point is about the same. The cost of transportation from Boonville to Warsaw per hundred pounds, is one dollar. From the mouth of the Osage to the same point by the improved navigation, it will probably not exceed an average of forty cents—resulting in a saving per hundred of sixty cents.

By the census of this year it is ascertained that the white inhabitants of the district of country that would in all probability get their supplies by this improvement, amounts to sixty-four thousand; and assuming six of these to be a family, the number of families will be ten thousand six hundred and sixty-six. Suppose that each of these families consume, for all purposes, fourteen bushels of salt of fifty lb. each, the whole present annual consumption of this article, amounts to one hundred and forty-nine thousand three hundred and twenty-four bushels, or seventy-four thousand six hundred and sixty-two hundred, which at sixty cents per hundred, is $44,797 20. In addition to this, estimates made by gentlemen of great intelligence, and who have ample means of arriving at correct conclusions, as to the consumption in this section, of other articles of importation, place this amount at twenty million pounds, or two hundred thousand hundred weight which, at the difference of sixty cents per hundred, makes an additional tax per annum of one hundred and twenty thousand dollars —the whole amounting to $164,797 20.

At the same time, the exchangeable value of the products of the country, is, from the same cause, diminished to a like extent, or at least $164,797 20, making a total annual loss of $329,594 40, which sum is equal to the annual interest at six per cent. upon an investment of $5,493,236 66. Thus showing that to this extent, at least, the present wealth of the State would be advanced by the expenditure of a little more than two hundred thousand dollars. But when in addition to this, attention is called to the extent of the country to be benefited —to its great agricultural capabilities—to its mineral wealth—to the immense population it is capable of sustaining—it appears to be not only the interest, but the duty of the State, to make such improvements as shall place the people of this great division of its territory as nearly on an equality with the rest of the citizens, as its resources and the nature of the country will permit.

ART. IV.—PLANK ROADS.*

Plan and Cross Section of a Plank Road.

The most valuable improvement since McAdam's, and one superior to his in many localities, is the recent invention of covering roads with planks. Plank roads were introduced in Canada by the governor general, Lord Sydenham, who had seen their utility in Russia. In 1834, the first one was there constructed, (leading from Toronto eastward), and since then five hundred miles of them have been there built. In the United States, the one from Syracuse to Central Square, New York, led the way, being finished in July, 1846; and its great success has already caused the construction of four or five hundred miles in this State, and the projection of twice as many more in it, and in New Jersey, Ohio, Michigan, Wisconsin, etc.

In the most generally improved system, two parallel rows of small sticks of timber (called indifferently *sleepers, stringers or sills*) are imbedded in the road three or four feet apart. Planks, eight feet long and three or four inches thick, are laid upon these sticks, across them, at right angles to their direction. A side track of earth to turn out upon, is carefully graded. Deep ditches are dug on each side, to ensure perfect drainage; and thus is formed a plank road.

The benefits of covering the earth with some better material, and the peculiar advantages of this plank covering will be more fully made known, when we shall have discussed in order the various details of construction.†

LAYING THEM OUT.

The waste of labor caused by unnecessary ascents in a road, has already been pointed out. It was also shown that it is profitable to the traveler to go two or three thousand feet around to avoid ascending a hill a hundred feet high; though the cost of constructing the additional length of road *partially* counterbalances this consideration. It was also

*The following article on plank roads, is a portion of a treatise "on the construction of roads," which has been continued in several late numbers of the American Railroad Journal. It contains all that a practical individual could reasonably desire to know in respect to the construction, but affords no information as to the business capacity of plank roads in comparison of turnpikes. We infer however, from tables found in a preceding part of the treatise that the same team can draw at least fifty per cent more on a plank, than on a common road of broken stone. We have been informed by an individual acquainted with the operations of the Chicago plank road that two horses haul on it two tons, and four horses from four to five tons with ease, and that teams travel with much greater speed on plank than on common roads. Editors.

†Hon. Philo White's report to the Council of Wisconsin, February 1848, embodies a very extended and systematic collection of information on this subject. To it, and to the valuable published and obliging private communications of Hon. Geo Geddes, C. E, (who first introduced and naturalized this improvement in the United States) the author is much indebted, as also to many other recent sources.

proved that the smoother the surface of the road was made, the more injurious proportionally were such ascents. They are, therefore, especially objectionable on plank roads which hold an intermediate place between common roads and railroads. Some distinguished engineers have been led astray on this point. Their arguments, if carried to their full extent, would lead to the construction of railroads also with similar steep grades. It is true, as they state, that a given load can be drawn up a much steeper hill on a plank road than on a common one, the friction on the former being so much less, but this will lessen in an equally increased ratio, the advantages of the level portions of the road. Let us assume the resistance of friction, or "sticktion," (as Professor Whewell calls it,) on a plank road to be one-third of that on a good earth road. It will, therefore, be one-sixtieth of the weight carried, if that of the earth be one-twentieth. If, now, a horse can draw one ton on a level earth road, the total resistance will be doubled when he comes to a hill which rises one foot in going twenty, (1 in 20,) and he will be only able to draw half a ton up this hill, and, therefore, his load on the level parts of the road would be but half a ton; for it would be useless for him to take more *to* the hill than he could drag *up* it. Now, suppose the same road to be planked, and this hill to remain untouched. On the level portions the same horse can now draw *three* tons by our hypothesis. But the hill, rising 1 in 20, will offer a resistance three times as great as does the "striction" of the plank road, and the whole resistance in going up it, will, therefore, be *four times* as great on a level. The horse can, therefore, draw only one-fourth of his former load, or only three quarters of a ton, which is, consequently, the limit of his load on the level. Thus then, this hill has brought down the *gain* of the plank road over the earth, to only a quarter of a ton, instead of two tons, which it would be were the hill removed. Therefore, in laying out a plank road, it is indispensable, in order to secure all the benefits which can be derived from it, to avoid or cut down all steep ascents.

A very *short* rise, of even considerable steepness, may, however, be allowed to remain, to save expense; since a horse can, for a short time, put forth extra exertion to overcome such an increased resistance; and the danger of slipping is avoided by descending upon the earthen track.

A plank road lately laid out, under the supervision of Mr. Geddes, between Cazenovia and Chittenango, New York, is an excellent exemplication of the true principles of roadmaking. Both these villages are situated on the "Chittenango creek," the former being eight hundred feet higher than the latter. The most level common road between these villages rises more than 1200 feet in going from Chittenango to Cazenovia, and rises more than four hundred feet in going from Cazenovia to Chittenango, in spite of this latter place being eight hundred feet lower. It thus adds one-half to the ascent and labor, going in one direction, and in the other direction it goes up hill half the height, which should have been a continuous descent. The line of the *plank road*, however, by following the creek, (crossing it five times,) ascends only the necessary eight hundred feet in one direction, and has no ascents in the other, with two or three trifling exceptions of a few feet in all, admitted in order to save expense. There is a

nearly perpendicular fall in the creek of one hundred and forty feet. To overcome this, it was necessary to commence far below the falls, to climb up the steep hill-side, following up the sides of the lateral ravines, until they were narrow enough to bridge, and then turning and following back the opposite sides till the main valley was again reached. The *extreme* rise is at the rate of one foot to the rod, (1 in 16 1-2;) and this only for short distances, and in only three instances, with a much less grade, or level, intervening. The line passes through a dense forest, which supplied its material, being cut into plank by saw-mills erected in a gulf never before approached by a wheeled carriage.

WIDTH.

A single track of plank, eight feet wide, with an earthen turn-out track beside it, of twelve feet, will, in almost all cases, be sufficient. This gives twenty feet for the least width necessary between the inside top lines of the ditches, the width of which is to be added, making about two rods on level ground. If extra cuttings or filling be required, the width occupied by their slopes must be added to this. An earthen road of eight feet wide on each side of the plank track, has sometimes been adopted. The New York general plank road law fixed four rods, (66 feet) as the least permissible width that plank roads may be laid out. This provision has since been repealed.

Wider plank tracks were at first employed. In Canada *single* tracks were made from nine to twelve feet wide. But it was found on the 12-feet Toronto road, after seven years' use, that the planks were worn only in the middle seven or eight feet, and that the remaining four or five feet of the surface had not even lost the marks of the saw. One-third of the planking was, therefore, useless, and one-third of the expenditure wasted.

A *double* plank track will rarely be necessary. No one without experience in the matter, can credit the amount of travel which one such track can accommodate. Over a single track near Syracuse, one hundred and sixty-one thousand teams passed in two years, averaging over two hundred and twenty teams per day, and during three days seven hundred and twenty passed daily. The earthen turn-out track must, however, be kept in good order, and this is easy, if it slope off properly to the ditch, for it is not cut with any continuous length-wise ruts, but is only passed over by the wheels of the wagons which turn off from the track, and return to it. They thus move in curves, which would very rarely exactly hit each other, and this travel being spread nearly uniformly over the earth, tends to keep it in shape rather than disturb it.

If, however, there is so much travel that the earth track will not remain in good order, then this travel will pay for the double track which it requires. But this should be made in *two separate eight-feet tracks*, and not in one wide one of sixteen or twenty-four feet, as was at first the practice. On a wide track the travel will generally be near its middle, and will thus wear out the planks very unequally, besides depressing them in the centre, and making the ends spring up, and when it passes near one end that will tilt up, and loosen the

other. Besides, when a light vehicle wishes to pass a loaded one moving in the centre, as it naturally will, the former will be greatly delayed in waiting for the other to turn aside, or else will have one wheel crowded off into the ditch. But where there are two separate tracks the whole width of one is at the service of the light vehicle. On a sixteen feet track near Toronto, the planks having become loose and unsettled, were sawn in two in the centre, and this imperfect double track, even without any turn-out path between, worked better than its original state. An experienced constructor states, that if he were desired to build a road fifty feet wide, he would make it in separate eight feet tracks.

A wide track of sixteen feet plank has sometimes been divided into two of eight feet, by spiking down scantling twenty feet long, and six inches square, along the middle of the road, at intervals of one hundred feet in the clear between each scantling. This, however, only partially remedies the objections adduced.

When the ground is of such a very unsettled and yielding nature, such as loose sand, marsh &c., that a solid turn-out track of earth cannot be made, planks, sixteen feet long, may be used, resting on three, four, or five sleepers, crowning in the middle three or four inches, and the ends sprung down, and pinned to the outer sleepers.

GRADING.

The importance of elevating a road bed above the level of the adjoining fields, and digging deep ditches on each side, has been already urged, and this is a fundamental requisite in making a good plank road. Employ the earth from the ditches, if good material, rejecting the sods, to raise the road bed. Give the ditches free outlets, cut their bottoms with true slopes, make under drains, of cobble stones and brush, across the road in wet places, and use every precaution to ensure thorough and complete drainage. This will be more difficult in a flat than in a hilly country. If it be effected, however, the plank will last much longer, and the road be always in better condition.*

The "cross-section" of the road bed, or its shape crosswise, between the ditches, must be carefully adjusted so as to freely carry off the rain which may fall on it. First decide on which side of the road the plank track is to be laid. It should generally be on the right hand side coming from the country into a town, so that the farmer's wagons may keep upon it when they bring in their heavy produce, and that the turning out may be done by those which are going back light.† The twelve feet width intended for the earth track should be heavily rolled or beaten, to make it firm and hard. It should slope

*The ditches and side slopes of the road bed, after being ploughed up, may be most rapidly shaped by the use of a scraper composed of two planks hinged together in front, and kept apart in the rear by an adjustable cross-piece. The team is attached to the outer plank at such a distance from the point as to keep the inner plank in the direction of the road, so that it forms the straight edge of the bank, while the skew of the outer plank throws the earth to one side in the manner of a snow plough. A man with a long lever inserted in the outer side, regulates this most exactly.

† But, in ascending a long hill in either direction, it should be on the right hand side.

down from the centre three-quarters of an inch to the foot, (1 in 16,) and the eight feet of plank should fall off three inches, or 1 in 32. From each side of the 20 feet thus graded, the bank should slope down to the bottom of the ditches at the rate of three inches to the foot, or 1 in 4.

The proper shape may be most easily and accurately given by the use of a common masons level, having a tapering piece of wood under it, or having one leg so much longer than the other, as will give the slope required. If the plank be laid on an old railway, no more of it should be broken up than is absolutely necessary for imbedding the sleepers, as it is very desirable to preserve as solid a foundation as possible.

SLEEPERS, SILLS, OR STRINGERS.

Material.—Pine, hemlock, tamarack, oak and walnut have been used in Canada. Hemlock has been mostly used in New York, from its abundance and cheapness. Pine would be more durable.

Number and Size.—At first, five or six, each six inches square, were placed under 16 feet plank. The Canada board of works, specification, 1845, directs four to be put under a 16-feet road, and 3 under a 10-feet road; the outer ones to be 5 inches square and the inner ones to be six inches wide, and two inches thick, laid flatwise. On the New York roads of eight feet planks, two sleepers, four inches square, have been generally employed. They have, however, been found insufficient, and the experienced engineer of the original Syracuse road, strongly recommends sleepers 12 by 3, laid on their flat sides, and for an important road would make them 12 by 4, or 12 by 6.* They should be large and strong enough to hold up the plank road in case of a soft place for a few feet. Others argue, however, that they should be small enough to sink down with the earth as it settles under the planks, so that these may continue to bear upon the ground; as otherwise the planks would be rapidly worn out by the springing thus caused, and would soon be rotted by the confined air under them. They also assert that the only use of the sleepeers is to keep the road in shape when first laid down. Indeed, a road three miles long has been laid in Canada, without any sleepers at all under the planks, and it worked quite well. Its advocates say that sleepers form a trench in which water collects, and is by them prevented from running off. It therefore floats the planks, or washes out mud from under them, and thus forms a cavity, which produces the bad effects above mentioned. This consideration would make light sleepers appear to be worse than none. The conclusion seems to be that large sleepers should be used for an important road; and that for a poor one, which expects to receive only light loads, and which runs over a hard bottom, sleepers might perhaps be altogether dispensed with.

Length.—The sleepers used should be as straight and true as possible. On the Syracuse road none less than 14 feet long were admitted. On the Canada roads they are required to be not less than 16 feet, nor more than 20 feet long.

*The lower sleeper may be fourteen inches wide, and the other ten, as the former acts as bridge over the channels made under it to let off the water.

Laying.—Their distance apart, centre to centre, should be such that the wheels of loaded wagons may pass directly over their middle or somewhat nearer to their outer than their inner sides. This distance will, therefore, vary in different sections of the country according to the usual "track" of wagons.* If this principle be varied from, it should be by bringing the sleepers nearer the middle than the ends of the plank, to prevent any depression in the centre. The foot wide sleepers in the figure are drawn three feet apart in the clear, or four feet centre to centre.

They should be well bedded in the earth, in trenches cut to receive them, with their top surface barely in sight. They should bear firmly and evenly throughout their whole length, and the earth between them be well rammed down, and made firm, solid, and even.† The sleeper nearer the ditch is to be laid so much lower than the inner one, as to give the proper slope to the road, which is so important for carrying off the rainwater.

Joints.—At the joints, where two sleepers come together, end to end, they are liable to sink under passing loads. To prevent this, various means may be employed. The broad sleepers (12 by 3) may be sawn in two lengthwise, so as to be each 6 by 3, and laid side by side, so as to "break joints;" the joints of one set being opposite the middle of the adjoining pieces with which is formed the other set. The sawmills charge no more for the sleepers in two pieces, each 6 by 3, than in one 12 by 3. A second remedy is to lay a short board under the joints of the sleepers. A third is to connect the ends by a mortise and tenon two inches long. A fourth is to unite them by a bevel scarfing, three inches in length, these to be reversed on each half, in which, for distinctness, the two sleepers are represented as separated. In every case the joint on one side of the road ought to be opposite the middle of the sleeper on the other side.

PLANK.

Material.—In Canada, pine, hemlock, tamarack, oak and walnut, have been employed. In this State, hemlock alone has been used, being the cheapest material to be obtained. Its defects are its perishable nature and its numerous knots, which soon make the road rough, when the softer portions of the plank have worn away. Pine, oak, maple or beech would be preferable. In Wisconsin, &c., white and burr oak are abundant, and would, therefore, be advantageously used. Oak would make the most permanent road from its superior capabilities in resisting both wear and decay. From its greater weight it would cost a little more for hauling and handling. The slipperiness of hard wood has been made an objection to it, but the sand with which the road should be covered would obviate this. Whatever sort

* The common track of wagons measured "from inside to outside," which is the same as from centre to centre, is four feet eight inches in the State of New York. In New Jersey and the Southern States, it is five feet. In Connecticut it varies from three feet eight inches, for light wagons, to five feet two inches for heavy ones. In Wisconsin it is five feet four inches

† A wooden roller, weighing two tons, has been very successfully used for settling the sleepers and the earth between them, being drawn over them several times before they are planked.

of timber is employed, it should be sound and free from sap, bad knots, shakes, wanes, or any other imperfections. The plank should be full on the edges, and not less than nine nor more than sixteen inches wide, if of hard wood.

Thickness.—The planks are usually either three or four inches thick; but the builders of the latter roads prefer giving less strength to the plank, and more to the sleepers, which are more durable; and, therefore, recommend three-inch plank, with sleepers a foot wide. With hemlock plank, any thickness beyond three inches is wasted, for when two inches have been worn down, the projecting knots will make the road too rough to travel on, and it will require renewal. One inch more will be sufficient to hold the knots in, so that we get three inches as the proper thickness. With less knotty timber, thicker plank may be used, *provided* there will be travel enough to wear out the whole thickness from above, before it unprofitably rots out from below. When two tracks are laid, that which would be traveled by the loaded wagons going to market may be laid with four-inch plank, and the other track, for the light wagons, with three-inch plank.

Laying.—The planks should be laid directly *across* the road, at right angles, or "square," to its line. The ends of the planks are not laid evenly to a line, but project three or four inches on each side alternately, so as to prevent a rut being formed by the side of the plank track, and to make it easier for loaded wagons to get upon it: as the wheels, instead of scraping along the ends of the planks, when coming towards the track obliquely after turning off, will, on coming square against the edge of one of these projecting planks, rise directly upon it. On the Canada roads, every three planks project three inches on each side of the road alternately.

The planks were laid *lengthwise* of the road, on the first one running from Quebec, it being supposed that they would wear better, and could be more easily taken up and replaced. But it was found that loaded horses slipped upon them, (the longitudinal direction of the grain giving no hold to the feet,) that ruts were soon worn in them, and that they did not keep their places. This arrangement is, therefore, now abandoned.

The planks have also been laid *obliquely*, diagonally, or 'skewing;' so as to make an angle of 45 degrees with the line of the road, twelve feet plank making an eight feet wide road. This plan is adopted on the Longeuil and Chambly road near Montreal. Its advantages are, that the edges of the plank are not worn down so soon as when the wheels strike them directly, that the zigzag ends of the plank facilitate the getting on the track; and that there is less loss on the rejected, or "cull" planks of 12 feet, than those of 8 feet. But when a wagon wheel comes upon one end of a plank laid thus obliquely, the other end, having no load to keep it down, will spring up, if not fastened to the sleeper; and if it is, the spikes or pins will finally be loosened. Each end of each plank undergoes the action in turn, and thus the road is injured and broken up. The first method of laying the planks—at right angles to the direction of the road—is much to be preferred.

The planks must be laid so as to bear equally on the sleepers, and on the ground between them, depending chiefly on the latter for sup-

port. The earth must be well up to and touching the planks at every point, for if any space of confined air be left, dry rot soon follows. If any water be allowed to get under the planks, it forms a soft mud, which is pressed up between them, and deposited on their surface, thus excavating a cavity under them, and rendering them liable to move under passing loads, in a manner which soon wears them out. They must also be laid to close joints.

Fastening.—On the Canada roads the planks have generally been spiked or pinned down to the sleepers. The specification of the board of public works directs them to be spiked "with one spike at each end for planks 12 inches wide or less, and two at each for planks of a greater width. The spikes are to be of a description called 'pressed' spikes, made of the best English or Canadian iron. They are to be 6 1-2 inches long, 3-8 inch square with chisel-shaped edges, and good broad heads, and are to weigh five to a pound. They are to be driven with the chisel-edge across the fibres of the wood."

On the New York roads this has been considered an unnecessary expense, since the loads come equally upon both ends of the tranverse planks, and thus tend to keep them down in their places, their own weight assisting in this. But in wet and badly drained places a new consideration intervenes. If the planks are not fastened down, they will float as soon as an inch of water gets under them. The wheels of a loaded wagon pressing down each plank in turn, drive the water before them, till it finally attains force enough to throw up a plank, and thus break up the road. On the other hand, when the planks are fastened down, the whole road is floated, and the vibrations produced by the passing loads drive the water out on the sides and top of the road, and excavates cavities, which ought to be immediately filled up, an operation which is made difficult by the fastening down of the planks to the sleepers. It is, therefore, thought better to leave the plank free, and allow them to be thrown out of place, and thus at once give free passage to the water, and prevent further mischief; a repairer being kept constantly at work upon the road, and required in rainy weather to pass over it once or twice a day. It might be well, as a compromise, to spike down planks at short intervals, say every fifth or tenth plank, the rest being well driven home against these.

Covering.—The planks having been properly laid, as has been directed, should be covered over one inch in thickness, with very fine gravel, or coarse sand, from which all stones or pebbles are to be raked, so as to leave nothing upon the surface of the road, that could be forced into and injure the fibres of the planks. The grit of the sand soon penetrates into the grain of the wood, and combines with the fibres, and the droppings upon the road, to form a hard and tough covering, like felt, which greatly protects the wood from the wheels and horses' shoes. Sawdust and tan bark have also been used.

The road is now ready for use.

ART. V.—THE EARLY SPIRIT OF THE WEST.

POLITICAL PARTIES AND FACTIONS IN KENTUCKY AND THE WESTERN COUNTRY, FROM 1788 TO 1806.—*De Bow's Commercial Review April* 1850, *Vol VIII., No. IV.*

THIS is the title of an essay in the above named Review, which, instead of portraying the early patriotism and gallantry of the West—a work it might well and justly have performed—attempts, at this late day, to rake up the embers of party strife, which have been long smothered by public consent, and are now almost forgotton in the subsequent strength and prosperity of this great section of the Republic. Still, nothing can excuse the injustice and gross misrepresentation of Kentucky history, and that of the West, which this essay so grossly, betrays. It shall be the business of this reply to point out those misrepresentations, of both measures and men, which have, for many years, been the subject of the writer's study and inquiry; he might almost say: "*quorum pars fui.*"

The assertion with which this essay opens is "That the great and dominant party (meaning in Kentucky, and about 1784,) consisted of those favorable to a legal separation from the parent State preliminary to an independent State government, and admission into the Federal Union." This is only justice to the frank and loyal character of the Kentucky pioneers, confirmed by the whole history of their repeated and patient attempts to effect a separation from Virginia; and her consent to the measure repeated in four different forms, at as many different times.

But this essay represents that other parties contemplated an independent government separate and distinct from the Federal Union, and under the *protection of one of the great monarchies, of Great Britain Spain or France.* These three parties were included under the general name of disunionists, in contradistinction to those who recognised and sustained the jurisdiction of the State and federal governments in opposition to all others. This is, indeed, a peremptory statement, apparently challenging contradiction. Yet, I will venture to assert, upon a long and intimate knowledge of the parties of Kentucky, that no such term was ever, in fact, used to mark her parties; nor did the principles of disunion enter into their spirit. In 1776, before Virginia had formally claimed her dominion over the West, the colony of Transylvania was attempted to be established under the great land company of Henderson & Co., under the authority of the British Crown, then the governing power. This earliest of the western colonies, and the first which collected a legislative body in the West, was so effectually put down by the combined authority of Virginia and North Carolina, and so absolutely acquiesced in by the people, that it has scarcely left a trace of its existence, beyond the grants of land which purchased the submission of the land company. Kentucky county sprung up in the place of the new colony, with scarcely an audible murmur, and Transylvania was afterwards transposed to the oldest of

the western literary institutions. But, when population and prosperity increased, then the pioneers begin to look for a foreign market for the surplus produce of their labor, which could not pass the mountains. Then they began, naturally enough, to stretch their eyes to the Mississippi as the only practicable outlet to the ocean and the markets of the world. But, suddenly, a rumor was heard that the government, consisting of the old Congress, meditated to suspend the navigation of this great stream for twenty or thirty years, in favor of Spain. Then, indeed, murmur naturally arose from the men who perilled everything on this side of the mountains. Soon after the report of this meditated wrong to the West, reached Pittsburgh, it produced an association for the purpose of warding off this blow, so fatal to the embryo west. The association transmitted to Lexington (Ky.) an account of this negociation, so terrible to their hopes, in terms almost necessarily exaggerated in the imperfect condition of public intercourse—when no mail service existed west of Pittsburgh, and for years afterwards, only one every *two* weeks. A letter of similar import to the Pittsburgh address, was directed from the Falls of Ohio to the Governor and Legislature of Georgia, having territorial claims to the banks of the Miss. (Pitkin's U. S. 2 p. 208). This communication from Pittsburgh, occasioned, in March 1787, a public address to the citizens of the then district of Kentucky, inviting them to assemble at Danville in the ensuing May. The shades of mistake as to the actual condition of the Spanish negociation and the consequent exaggeration in these different public communications, at such a time of limited intercourse, and on so sensitive a subject, I will not now stop to point out and explain. My purpose is, to show the existence of a substantial cause for this fevered state of the public mind, on a subject dear to the hearts of the people. Well, so deeply had apprehensions for the navigation of the Mississippi affected the public mind, that Congress felt it necessary, in September, 1788, in order to remove them, to authorise its members to contradict the reports that it was disposed to treat with Spain for the navigation of the Mississippi. That body also, formally resolved that the free navigation of the Mississippi was a clear and essential right of the United States; and that the same ought to be considered and supported as such. Virginia had, in November 1786, taken up the same subject, and in a manner more decisively in favor of the rights and interests of her western citizens, contrary to what had been her own action on this very subject in the earlier and more threatening times of the Revolutionary wars. And again, so late as 1788, when the present Constitution of the United States was under discussion in the convention of Virginia, so imperfect was the public information on the subject, that Mr. Monroe was called upon to explain the whole matter to that grave assembly, in whose proceedings his communication appears. This forms the earliest full account of a negociation so deeply interesting to the West, even in its earliest weakness, when surrounded by ferocious and hostile tribes of the most warlike savages in North America.

Yet, notwithstanding this agitating state of things from causes not now to be traced, the meeting did assemble at Danville, as invited by the circular above mentioned, and adjourned without even a fire of resolutions. This is no slight evidence of the influence of pacifying

considerations not any longer accessible. This forms the principal portion of the domestic action, which no patriot can now condemn on this interesting matter.

ORIGIN OF THE SPANISH PARTY IN KENTUCKY.

The Spanish party in Kentucky, had its origin in the attempts of both France and Spain to limit the territory of the United States to the Alleghany mountains. The exertions of the Count Lucerne, the French Minister at Philadelphia, were pertinaciously directed in conformity with the instructions of his court and the interest of Spain, to prevail on the Old Congress to instruct their minister at Paris, "that the United States extend to the westward no further than settlements were permitted by the British proclamation of 1763; 2d, that the United States do not consider themselves as having any right to navigate the Mississippi—no territory belonging to them being situated thereon; 3d, that the settlements east of the Mississippi, embracing Kentucky with her northern and southern neighbors, which were prohibited as above, are possessions of the Crown of Great Britain, and proper objects against which the arms of Spain may be employed, for the purpose of making a permanent conquest for the Spanish Crown." (Pitkin's U. S., Vol 2, pp, 97, 99 & 109).

How all this intrigue of both branches of the House of Bourbon which extended from Paris and Madrid to Philadelphia and New York was defeated, is no longer necessary to narrate. It is however, a page of our history full of honor to Jefferson and Madison, and, above all, to John Jay.

The ramification of this intrigue, which first manifested itself at New York, and then at New Orleans, has a more domestic interest, and is directly connected with the subject of this essay. After the failure of the negociation between Spain and the United States, previously mentioned, owing to the haughtiness of the former in 1788, Don Gardoqui, the Spanish minister at New York, informed Mr. John Brown, then attending as a member of the old Congress from Virginia, "that if the people of Kentucky would erect themselves into an independent State and appoint a proper person to negociate with him, he had authority for that purpose, and would enter into an arrangement with them for the exportation of their produce to New Orleans."

This proposition was enclosed in a confidential letter to Judge Mc Dowell, the President of several Conventions in the district of Kentucky, (Littell's Narrative appendix, p. 40, Perkins' Annals of the West, p. 313, 1st edition). A letter of a similar spirit was written also by Mr. Brown, to Judge Muter, the Chief Justice of the district of Kentucky. These letters are likewise mentioned in a correspondence between Col. Thomas Marshall, the father of the late pre-eminent Chief Justice of the United States, and Gen. Washington communicated to the present writer by Mr. Sparks. These same offers were communicated to Mr. Madison, then a colleague of Mr. Brown, in the old Congress. In a letter to the present writer, dated Montpelier, Otcober 11th, 1834, that venerated statesman said: "I have received yours of the 21st, ult., in which you wish to obtain my recollections of what passed between Mr. Brown and me in 1788, in

the overtures of Gandoque, that if the people of Kentucky would erect themselves into an independent State, and appoint a proper person to negotiate with him, he had authority for that purpose, and would enter into an arrangement with them for the exportation of their produce, to New Orleans. My recollection, with which, references to my manuscript papers, leaves no doubt that the overture was communicated to me by Mr. Brown. Nor, can I doubt as stated by him, I expressed the opinion and apprehension, that a knowledge of it in Kentucky, might, in the excitements there, be mischievously employed. This view of the subject, evidently presented from the natural and known impatience of the people as the waters of the Mississippi, for a market for the products of their exuberant soil; from the *distrust* of the Federal policy produced by the project for surrendering the navigation of that river for a term of many years." "I owe it to Mr. Brown, with whom I was on intimate friendship, when we were associated in public life, to observe, that I always regarded him whilst steadily attentive to the interests of his constituents, as duly impressed with the importance of the Union, and anxious for its prosperity." Such is a full and unvarnished account of the first overtures of Spain to Kentucky. And, I must freely admit that the first idea which strikes the mind in considering this letter is, that Mr. Brown, and in all probability, Wilkinson, Innes, Muter, and many of the other eminent statesmen of Kentucky did incline to adopt some connexion with Spain, independent of the feeble and disgraced confederation which existed in 1788—a government in name more than in fact, disobeyed at home and despised abroad. There was another circumstance most exasperating to the hearts of the western people, that this government, imbecile as it was, had formally proffered to shed the very life blood of the West, by suspending the navigation of the Mississippi for twenty or thirty years, in terrible probability for ever. Concessions seldom go backward between rival nations. Under these aggravating circumstances. I do not think a commercial connection with Spain is to be deemed cause of reprobation against the patriotism of Kentucky statesmen ; on the contrary, at that time, and under those circumstances, it might be demanded by the most sacred duties to this deserted and forlorn section of a disjointed confederation. I have said on another occasion what I now conscientiously confirm, that to try the conduct of Kentucky statesmen in 1788, under a confederation in ruins and in factions by the same principles which should now direct the mind under an efficient and beneficient government, would be absurd and unjust. The peculiar circumstances of the times must be adverted to in order to arrive at any just estimate of the measure or its authors. What then were these circumstances? They are eloquently and not less truly narrated by Gen. Wilkinson "open to savage depredations, exposed to the jealousies of the Spanish Government unprotected by that of the old confederation, and denied the *navigation of the Mississppi*, the only practicable channel by which the productions of their labor could find a market." (Wilkinson's memoirs, vol 2 p. 119). Again, "all who ventured on the Mississippi had their property seized by the first commanding (Spanish) officer whom they met, and little or no communication was kept up between the two countries." Was this a

condition for any community, much less for one of high-spirited freemen, with their arms in their hands, just fresh from hunting down the British lion, to tolerate any longer than it was unavoidable." How long would any section of this republic, however faithfully devoted to the Union, *now*, submit to so intolerable a state of things? Couple these grievances which must have blasted the industry and the dearest hopes of the country—which must have driven the immigrant back over the mountains, and condemned the rich lands of Kentucky and the West, to waste their fertility in uncultivated forests—again to become an Indian wilderness rather than continue a civilized community. From these circumstances some faint idea may be conceived of the necessity which the statesmen and people of Kentucky must have felt to look to some other protection for the vital interests of the country, than the tottering and imbecile confederacy which then deluded the country under the pretence of a government. Can circumstances be imagined more imperative on Kentucky patriots and statesmen to look for that protection which their own government could not give, and without which all government is a mockery and a perversion of the very purposes of its creation?

This whole subject was before the district convention at Danville, in Kentucky, in 1788; Mr. John Brown was on its floor as a member, and was called out by Gen. Wilkinson to communicate to the convention the information he possessed on the subject of the navigation of the Mississippi. To this invitation Mr. Brown replied that "he did not feel himself at liberty to disclose what had passed in private conferences between the Spanish Minister, Don Gardoqui, and himself; but this much in general he would venture to inform the convention, that provided we are unanimous, every thing we could wish for is within our reach." (See Littell Marshall and Butler.) Nothing further was done at this convention than adopting an address to Congress and the Legislature of Virginia, urging the independence of Kentucky. It may as well be mentioned in connection with this part of my subject, that Mr. Brown informed the present writer (and who that ever knew the conscientious veracity of his venerable character will not appreciate its unimpeachable worth,) that in advocating unanimity in the convention, and declaring that every thing we could wish for is within our reach, he meant State independence; not distinct from the Union of the States; but just as it was afterwards obtained in connection with the other States." The backwardness which Mr. Brown discovered in the Convention, to enlarge upon the offers of the Spanish Minister previously communicated to Judges McDowell and Muter, may well be attributed to a change of opinion produced by the interview with Mr. Madison. This frank disclosure to an eminent colleague in addition to the communications to the heads of the legislature, and the bench of the district, (as the President of the Convention and the Chief Justice may well be termed,) at once vindicates the loyalty of Mr. Brown to the union of the States and accounts for his reluctance to furnish any further information on the subject. It may be well, at this late day to add, that Mr. Brown enjoyed the highest confidence of his compatriots—that he not only had the rare honor of being the only representative from the western country, who ever sat in the old Congress; but was the first representative of Ken-

tucky, in the Federal government twice; elected her Senator, in the council of the Union; and, moreover, by the appointment of Washington he was a member of the board of war in the West, associated with Shelby and Scott. Are these honors that would have been extended to a Spanish conspirator? How comes this essay to assert that "Brown readily acceded to the proposed terms by Gardoqui; that he arranged the terms of a commercial union with Louisiana; 2d. that to Judge McDowell he (Brown) communicated a general outline of the terms of alliance proposed to the people of Kentucky, on the part of Spain."? Was any thing like a final and conclusive arrangement entered into on the part of Brown, or acceded to by Spain?—anything beyond a bare overture suggested by the Spanish Minister, communicated to the members of the convention in Kentucky, and in person by himself—all published in the lifetime and with the knowledge of the parties, State and Federal, and in the face of a public convention. Are the public of this day to be imposed upon and deceived by random statements drawn from no other source than a virulent and partizan paper, the *Western World*, published for a short time in Kentucky, some forty years ago? Yet, this is the authority to which this essay stoops to support its scandals against the early spirit and the statesmen of the West. Such is the testimony produced for matters which have been sifted by excited discussions recorded in legislative proceedings, and have finally received the formal stamp of history. Such is the progress and close of the first phase or form of the Spanish party in Kentucky. It originated in attempts to resist the surrender of the navigation of the Mississippi to Spain, the rich inheritance which millions are now enjoying, as proposed by the old Congress and yet despised by Spain. The next great object with the people of Kentucky, if at all inferior to the former, was the establishment of a domestic government distinct from Virginia. This was effected in 1792, with the consent of all the high parties.

(*To be Continued.*)

ART. IV.—CALIFORNIA LAND TITLES—CATHOLIC MISSIONS.

The report of W. Carey Jones "on the subject of land titles in California, made in pursuance of instructions from the Secretary of State and the Secretary of the Interior" is a document of great length; and contains many facts which, we think, will be interesting and perhaps useful to our readers. We have devoted a larger space to this report than we are in the habit of giving to articles on any one subject; but, desiring to publish the entire account of the "California Missions" we could not, with propriety, separate it from the preceding part of the report.

We had hoped that this document would have afforded some information relating to the laws which prevailed in California in respect

to mines and mining at the time of its cession to the United States—in this however we have been disappointed. Mr. Jones, as it appears confined his enquiries within the range of his instructions ; and, is consequently, silent on this subject. He informs us that the grants of land from Mexico to individuals contain no reservation of the mines, which they may contain, and leaves us to infer that the government divested itself of all control over the mines when it disposed of the soil.

Should this inference be correct it will relieve the mineral lands and mining interest of California from certain embarrassing questions that have been suggested by learned individuals, both in this country and in Europe.

From the loose manner in which grants appear to have been made in California, we are persuaded that great difficulties will arise in the adjustment of titles : much will depend upon the legislation of Congress in regard to the nature of the evidence required to establish the right of the claimant; and much circumspection will be required in framing a law that will secure to the grantee all the benefits to which he is entitled by virtue of the treaty, and at the same time guard the government against fraudulent claims. EDITORS.

On the subject of Land Titles in California, made in pursuance of instructions from the Secretary of State and the Secretary of the Interior, by Wm. Carey Jones.

On arriving in California, my attention was immediately directed to the subjects embraced in your letter of instructions.

I. "*To the mode of creating titles to land, from the first inception to the perfect title, as practised by Mexico, within the province of California.*"

All the grants of land made in California (except pueblo or village lots, and except, perhaps, some grants north of the bay of San Francisco, as will be hereafter noticed) subsequent to the independence of Mexico, and after the establishment of that government in California, were made by the different political governors. The great majority of them were made subsequent to January, 1832, and consequently under the Mexican Colonization Law of 18th August, 1824, and the government regulations, adopted in pursuance of the law, dated 21st November, 1828. In January, 1832, General Jose Figueroa became Governor of the then Territory of California, under a commission from the government at Mexico, replacing Victoria, who, after having the year before displaced Echandrea, was himself driven out by a revolution. The installation of Figueroa restored quiet, after ten years of civil commotion, and was at a time when Mexico was making vigorous efforts to reduce and populate her distant territories, and consequently, granting lands on a liberal scale. In the act of 1824, a league square (being 4,428 402-1000 acres) is the smallest measurement of rural property spoken of; and of these leagues square, eleven (or nearly 50,000 acres) might be conceded in a grant to one individual. By this law, the *States* composing the federation were authorized to make special provision for colonization within their respective limits, and the colonization of the *Territories*, "conformably to the principles of the law," charged upon the Central Govern-

ment. California was of the latter description, being designated a Territory in the *Acta Constitutiva* of the Mexican federation, adopted 31st January, 1824, and by the constitution adopted 4th October of the same year.* The colonization of California, and granting of lands therein, were, therefore, subsequent to the law of 18th August, 1824, under the direction and control of the Central Government. That government, as already stated, gave regulations for the same, 21st November, 1828.

The directions were very simple. They gave the governors of the Territories the exclusive faculty of making grants, within the terms of the law—that is, to the extent of eleven leagues, or *sitios*, to individuals; and colonization grants, (more properly, *contracts*)—that is, grants of larger tracts to *empresarios*, or persons who should undertake, for a consideration in land, to bring families to the country for the purpose of colonization. Grants of the first description, that is, to families or single persons, and not exceeding eleven *sitios*, were "not to be held definitely valid," until sanctioned by *Territorial Deputation*. Those of the second class, that is *empresario* or colonization grants, (or contracts,) required a like sanction by the *Supreme Government*. In case the concurrence of the Deputation was refused to a grant of the first-mentioned class, the governor should appeal, in favor of the grantee, from the assembly to the Supreme Government.

The "*first inception*" of the claim, pursuant to the regulations, and as practised in California, was a petition to the Governor, praying for the grant specifying usually the quantity of land asked, and designating its position, with some descriptive object or boundary, and also stating the age, country, and vocation of the petitioner. Sometimes, also, (generally at the commencement of this system,) a rude *map* or *plan* of the required grant, showing its shape, and position with reference to other tracts, or to natural objects, was presented with the petition. This practice, however, was gradually disused, and a few of the grants made in late years have any other than a verbal description.

The next step was usually a reference of the petition, made on the margin by the governor, to the prefect of the district, or other near local officer, where the land petitioned for was situate, to know if it was vacant, and could be granted without injury to third persons or the public, and sometimes to know if the petitioner's account of himself was true. The reply (*informe*) of the prefect, or other officer, was written upon or attached to the petition, and the whole returned to the governor. The reply being satisfactory, the governor then issued the grant in form. On its receipt, or before, (often before the petition even,) the party went into possession. It was not unfrequent, of late years, to omit the formality of sending the petition to the local authorities, and it was never requisite, if the governor already possessed the necessary information concerning the land and the parties. In that case the grant followed immediately on the petition.

* The political condition of California was changed by the Constitution of 29th December, an act for the division of the Republic into Departments, of the 30th December, 1836. The two Californias then became a Department, the confederation being broken up, and the States reduced to Departments. The same colonization system, however, seems to have continued in California.

Again, it sometimes happened that the reply of the local authority was not explicit, or that third persons intervened, and the grant was thus for some time delayed. With these qualifications, and covering the great majority of cases, the practice may be said to have been: 1, The petition; 2. The reference to the prefect or alcalde; 3. His report, or *informe*; 4. The grant from the governor.

"*When filed, and how, and by whom recorded?*"

The *originals* of the petition and *informe*, and any other preliminary papers in the case, were filed by the secretary in the government archives, and with them a *copy* (the original being delivered to the grantee) of the grant: the whole attached together so as to form one document, (entitled, collectively, an *expediente.*) During the governorship of Figueroa and some of his successors, that is, from 22d May 1833, to 9th May, 1836, the grants were likewise *recorded* in a book kept for that purpose (as prescribed in the "regulations" above referred to) in the archives. Subsequent to that time there was no *record*, but a brief memorandum of the grant; the *expediente*, however, still filed. Grants were also sometimes registered in the office of the prefect of the district where the lands lay; but the practice was not constant, nor the record generally in a permanent form.

The next and final step in the title was the approval of the grant by the Territorial Deputation, (that is, the local legislature, afterward, when the territory was created into a Department, called the "Department Assembly.") For this purpose, it was the governor's office to communicate the fact of the grant, and all information concerning it, to the assembly. It was here referred to a committee, (sometimes called a committee on vacant lands, sometimes on agriculture,) who reported at a subsequent sitting. The approval was seldom refused; but there are many instances where the governor omitted to communicate the grant to the assembly, and it consequently remained unacted on. The approval of the assembly obtained, it was usual for the secretary to deliver to the grantee, on application, a certificate of the fact; but no other record or registration of it was kept than the written proceedings of the assembly. There are, no doubt, instances, therefore, where the approval was in fact obtained, but a certificate not applied for; and as the journals of the assembly, now remaining in the archives, are very imperfect, it can hardly be doubted that many grants have received the approval of the assembly, and no record of the fact now exists. Many grants were passed upon and approved by the assembly, in the winter and spring of 1846, as I discovered by loose memoranda, apparently made by the clerk of the assembly for future entry, and referring to the grants by their numbers—sometimes a dozen or more on a single small piece of paper; but of which I could find no other record.

"*So, also, With the subsequent steps, embracing the proceedings as to survey, up to the perfecting of the title?*"

There were not, as far as I could learn, any regular surveys made of grants in California, up to the cessation of the former government. There was no public or authorised surveyor in the country. The grants usually contained a direction that the grantee should receive judicial possession of the land "from the proper magistrate, (usually the nearest alcalde) in virtue of the grant," and that the

boundaries of the tract should then be designated by that functionary, with "suitable land marks." But this injunction was usually complied with, only by procuring the attendance of the magistrate, to give judicial possession, according to the verbal description contained in the grant. Some of the old grants have been subsequently surveyed, as I was informed, by a surveyor under appointment of Col. Mason, acting as Governor of California. I did not see any official record of such surveys, or understand that there was any. The "*perfecting of the title*" I suppose to have been accomplished when the grant received the concurrence of the assembly; all provisions of the law, and of the colonization regulations of the supreme government, pre-requisites to the title being "definitely valid," having been then fulfilled. These, I think, must be counted *complete titles.*

"*And if there be any more books, files or archives, of any kind whatsoever, showing the nature, character and extent of these grants ?*".

The following list comprises the books of record and memoranda of grants, which I found existing in the government archives at Monterey:

1. "1828. Cuaderno del registro de los sitios, fierras, y senales que posean los inhabitantes del territorio de la Nueva California."—(Book of registration of the farms, brands, and marks [for marking cattle] possessed by the inhabitants of the territory of New California.)

This book contains information of the situation, boundaries and appurtenances of several of the missions, as hereafter noticed; of two pueblos, San Jose and Branciforte, and the records of about twenty grants, made by various Spanish, Mexican and local authorities, at different times, between 1784 and 1825, and two dated in 1829. This book appears to have been arranged upon information obtained in an endeavor of the government to procure a registration of all the occupied lands of the territory.

2. Book marked "*Titulos.*"

This book contains records of grants, numbered from 1 to 108, of various dates, from 22d of May, 1833, to 9th of May, 1836, by the successive governors, Figueroa, Jose Castro, Nicholas Gutierrez, and Mariano Chico. A part of these grants (probably all) are included in a file of *expedientes* of grants, hereafter described, marked from No. 1 to 579; but the numbers in the book do not correspond with the numbers of the same grants in the *expedientes.*

3. "Libro donde se asciertan los despachos de terrenos adjudicados enos de 1839 and 1840."—(Book denoting the concessions of land adjudicated in the years of 1839 and 1840.)

This book contains a brief entry, by the secretary of the department, of grants, including their numbers, dates, names of the grantees and of grants, quantity granted, and situation of the land, usually entered in the book in the order they were conceded. This book contains the grants made from 18th January, 1839, to 8th December, 1843, inclusive.

4. A book similar to the above, and containing like entries of grants issued between 8th January, 1844, and 23d December, 1845.

5. file of *expedientes* of grants—that is, all the proceedings (except of the Assembly) relating to the respective grants, secured, those of each grant in a separate parcel, and marked and labelled with its num-

ber and name. This file is marked from No. 1 to 579, inclusive, and embraces the space of time between 13th of May, 1833, and to July 1846. The numbers, however, bear little relation to the dates. Some numbers are missing, of some there are duplicates—that is, two distinct grants with the same number. The expedientes are not at all complete; in some places the final grant appears to have been refused; in others it is wanting. The collection, however, is evidently intended to represent estates which have been granted, and it is probable that in many or most instances the omission apparent in the archives is suppplied by original documents in the hands of the parties, or by long permitted occupation.

These embrace all the record books and files belonging to the territorial department archives, which I was able to discover.

I am assured, however, by Mr. J. C. Fremont, that, according to the best of his recollection, a book for the year 1846, corresponding to those above noted, extending from 1839 to the end of 1845, existed in the archives while he was Governor of California, and was with him when he delivered them, in May, 1847, to the officer appointed by Gen. Kearney to receive them of him at Monterey.

II. "*Chiefly the large grants, as the missions, and whether the title to them be in assignees, or whether they have reverted, and vested in the sovereign?*"

I took much pains, both in California and in Mexico, to assure myself of the situation, in a legal and proprietary point of view, of the former great establishments known as the *missions* of California. It had been supposed that the lands they occupied were *grants*, held as the property of the church, or of the mission establishments as corporations. Such, however, was not the case. All the missions in Upper California were established under the direction, and mainly at the expense, of the government, and the missionaries there had never any other rights than to the occupation and use of the lands for the purpose of the missions, and at the pleasure of the government. This is shown by the history and principles of their foundation, by the laws in relation to them, by the constant practice of the government toward them, and, in fact, by the rules of the Franciscan order, which forbid its members to possess property.

The establishment of missions in remote provinces was a part of the colonial system of Spain. The Jesuits, by a license from the Viceroy of New Spain, commenced in this manner the reduction of Lower California in the year 1697. They continued in the spiritual charge, and in a considerable degree of the temporal government, of that province, until 1767, when the royal decree abolishing the Jesuit order throughout New Spain, was there enforced, and the missions taken out of their hands. They had then founded fifteen missions, extending from Cape St. Lucas, nearly to the head of the sea of Cortes, or Californian gulf. Three of the establishments had been suppressed by order of the Viceroy; the remainder were now put in charge of the Franciscan monks, of the college of San Fernando, in Mexico, hence sometimes called "*Fernandinos.*" The prefect of that college, the Rev. Father Junipero Serra, proceeded in person to his new charge, and arrived, with a number of monks, at Loreto, the capital of the peninsula, the following year (1768). He was there, soon

after, joined by Don Jose Galvez, inspector general (*visitador*) of New Spain, who brought an order from the king, directing the founding of one or more settlements in Upper California. It was therefore agreed that Father Junipero should extend the mission establishments into Upper California, under the protection of *presidios* (armed posts) which the government would establish at San Diego and Monterey. Two expeditions, both accompanied by missionaries, were consequently fitted out, one to proceed by sea, the other by land, to the new territory. In June, 1769, they had arrived, and in that month founded the first mission, about two leagues from the port of San Diego. A *presidio* was established at the same time, near the port. The same year a presidio was established at Monterey, and a mission establishment begun. Subsequently the Dominican Friars obtained leave from the King to take charge of part of the missions of California, which led to an arrangement between the two societies, whereby the missions of Lower California were committed to the Dominicans, and the entire field of the upper province remained to the Franciscans. This arrangement was sanctioned by the political authority, and continues to the present time. The new establishments flourished, and rapidly augmented their numbers, occupying first the space between San Diego and Monterey, and subsequently extending to the northward. A report from the viceroy to the King, dated at Mexico, 27th December, 1793, gives the following account of the number, time of establishment, and locality of the missions existing in New California at that time:

1. San Diego de Alcala,	Lat. 32°	42'	July 16, 1769
2. San Carlos de Monterey,	36	33	June 3, 1770
3. San Antonio de Padua,	36	34	July 14, 1771
4. San Gabriel de los Temblores,	34	10	Sept. 8, 1771
5. San Luis Obispo,	31	38	Sept. 1, 1772
6. San Francisco (Delores),	37	56	Oct. 9, 1776
7. San Juan Capistrano,	33	30	Nov. 1, 1776
8. Santa Clara,	37	00	Jan. 18, 1777
9. San Buenaventura,	34	36	Mar. 31, 1782
10. Santa Barbara,	34	28	Oct. 4, 1786
11. Purisima Conception,	35	32	Jan. 8, 1787
12. Santa Cruz,	36	58	Aug. 28, 1791
13. La Solidad,	36	38	Oct. 9, 1791

At first, the missions nominally occupied the whole territory, except the four small military posts of San Diego, Santa Barbara, Monterey, and San Francisco; that is, the limits of one mission were said to cover the intervening space to the limits of the next; and there were no other occupants except the wild Indians, whose reduction and conversion was the object of the establishments. The Indians, as fast as they were reduced, were trained to labor in the missions, and lived either within its walls, or in small villages near by, under the spiritual and temporal direction of the priests, but the whole under the political control of the governor of the province, who decided contested questions of right or policy, whether between different missions, between missions and individuals, or concerning the Indians. Soon, however, grants of land began to be made to individuals, especially to retired soldiers, who received special favor in the distant colonies of

Spain, and became the settlers and founders of the country they had reduced and protected. Some settlers were also brought from the neighboring provinces of sonora and Sinaloa, and the towns of San Jose, at the head of the bay of San Francisco, and of Los Angeles, eight leagues from the port of San Pedro, were early founded. The governor exercised the privilege of making concessions of large tracts, and the captains of the presidios were authorised to grant building lots, and small tracts for gardens and farms, within the distance of two leagues from the presidios. By these means the mission tracts began respectively to have something like known boundaries ; though the lands they thus occupied were still not viewed, in any light, as the property of the missionaries, but as the domain of the crown, appropriated to the use of the mission while the state of the country should require it, and at the pleasure of the political authorities.

It was the custom throughout New Spain, (and other parts of the Spanish colonies also,) to secularize, or to subvert, the mission establishment at the discretion of the ruling political functionary ; and this not as an act of arbitrary power, but in the exercise of an acknowledged ownership and authority. The great establishments of Sonora, I have been told,were divided between white settlements and settlements of the Indian pupils, or neophytes of the establishments. In Texas the missions were broken up, the Indians were dispersed, and the lands have been granted to white settlers. In New Mexico, I am led to suppose, the Indian pupils of the missions, or their descendants, still, in great part, occupy the old establishments ; and other parts are occupied by white settlers, in virtue of grants and sales.* The undisputed exercise of this authority over all the mission establishments, and whatever property was pertinent to them, is certain.

The liability of the missions of Upper California, however, to be thus dealt with, at the pleasure of the Government, does not rest only on the argument to be drawn from this constant and uniform practice. It was inherent in their foundation—a condition of their establishment. A belief has prevailed, and it is so stated in all the works I have examined which treat historically of the missions of that country, that the first act which looked to their secularization, and especially the first act by which any authority was conferred on the local government for that purpose, or over their temporalities, was an act of the Mexican Congress of 17th August, 1833. Such, however, was not the case. Their secularization—their subversion—was looked for in their foundation ; and I do not perceive that the local authority (certainly not the supreme authority) has ever been without that lawful jurisdiction over them, unless subsequent to the colonization regulations of 21st Nov., 1828, which temporally exempted mission lands

*Since writing the above, I have learned from the Hon. Mr. Smith, delegate from the Territory of New Mexico, that the portion of each of the former mission establishments which has been allotted to the Indians is *one league square.* They hold the land, as a general rule, in community, and on condition of supporting a priest and maintaining divine worship. This portion and these conditions are conformable to the principles of the Spanish laws concerning the allotment of Indian villages. Some interesting particulars of the foundation, progress and plan of the missions of New Mexico are contained in the report, or information, before quoted, of 1793, from the Viceroy to the King of Spain, and in extracts from it given in the papers accompanying this Report.

from colonization. I quote from a letter of "instructions to the commandant of the new establishment of San Diego and Monterey," given by Viceroy Bucareli, 17th August, 1773:

"Art. 15. When it shall happen that a mission is to be formed into a pueblo, (or village,) the commandant will proceed to reduce it to the civil and economical government, which according to the laws, is observed by other villages of this kingdom; then giving it a name, and declaring for its patron the saint under whose memory and protection the mission was founded." (Cuando llegee el caso de que haya de formarse en el pueblo una mision, procedera el commendante a reducirlo al gohierno civil y economico que observan, segun las leyes, los demas de este reyno poniendole dombre entonces, declarandole por su titular el santo bajo cuya memoria y venerable proteccion se funde la mision.)

The right, then, to re-model these establishments at pleasure, and convert them into towns and villages, subject to the known policy and laws which governed settlements of that description,* we see was a principle of their foundation. Article 7 and 10, of the same letter of instructions, show us also that it was a part of the *plan* of the missions that their conditions should be thus changed; that they were regarded only as the nucleus and bases of communities to be thereafter emancipated, acquire proprietary rights and administer their own affairs; and that it was the duty of the governor to choose their sites, and direct the construction and arrangement of their edifices, with a view to their convenient expansion into towns and cities. And not only was this general revolution of the establishments thus early contemplated and provided for, but meantime the governor had authority to reduce their possessions by grants within and without, and to change their condition by detail. The same series of instructions authorised the governor to grant lands, either in community or individually, to the Indians of the missions, in and about their settlements on the mission lands; and also to make grants to settlements of white persons. The governor was likewise authorised at an early day to make grants to soldiers who should marry Indian women trained in the missions; and the first grant (and only one I found of record) under this authorisation, was of a tract near the mission edifice of Carmel, near Monterey. The authorisations given to the captains of *presidjos* to grant lands within two leagues of their posts, expressly restrains them within that distance, so as to leave the territory beyond—though all beyond was nominally attached to one or the other of the missions—at the disposition of the superior guardians of the royal property. In brief, every fact, every act of government, and principle of law applicable to the case which I have met in this investigation, go to show that the missions of Upper California were never from the first, reckoned other than government establishments, or the founding of them to work any change in the ownership of the soil,

*A revolution more than equal to the modern *secularization*, since the latter only necessarily implies the turning over of the temporal concerns of the mission to secular administration. Their conversion into pueblos would take from the missions all semblance in organization to their originals, and include the reduction of the missionary priests from the heads of great establishments, and administrators of large temporalities, to parish curates: a change quite inconsistent with the existence in the priests or the church of any proprietary interest or right over the establishment.

which continued in and at the disposal of the crown, or its representatives. This position was also confirmed, if it had needed any confimation, by the opinions of high legal and official authorities in Mexico. The missions—speaking collectively of priests and pupils—had the *usufruct;* the priests the administrators of it; the whole resumable, or otherwise disposable, at the will of the crown or its representatives.

The object of the mission was to aid in the settlement and pacification of the country, and to convert the natives to Christianity. This accomplished, settlements of white people established, and the Indians domiciliated in villages, so as to subject them to the ordinary magistrates, and the spiritual care of the ordinary clergy, the *missionary* labor was considered fulfilled, and the establishment subject to be dissolved or removed. This view of their purposes and destiny fully appears in the tenor of the decree of the Spanish Cortes, of 13th September, 1813.* The provisions of that act, and the reason given for it, develop in fact the whole theory of the mission establishments. It was passed "in consequence of a complaint by the Bishop elect of Guiana of the evils that afflicted that province, on account of the Indian settlements in charge of missions not being delivered to the ecclesiastical ordinary, though thirty, forty, and fifty years had passed since the reduction and conversion of the Indians." The Cortes therefore decreed:

1. That all the new *reducciones y doctrines*, (that, is, settlements of Indians newly converted, and not yet formed in parishes,) of the provinces beyond sea, which were in charge of missionary monks, and had been ten years subjected, should be delivered immediately to the respective ecclesiastical ordinaries, (bishops,) "without resort to any excuse or pretext, conformably to the laws and cedulas in that respect."

2. That as well these missions, (*doctrinas*,) as all others which should be erected into curacies, should be canonically provided by the said ordinaries, (observing the laws and credulas of the royal right of patronage,) with fit ministers of the secular clergy.

3. That the missionary monks, relieved from the converted settlements, which should be delivered to the ordinary, should apply themselves to the extension of religion in benefit of the inhabitants of other wilderness parts, proceeding in the exercise of their missions conformably to the directions of paragraph 10, article 335, of the Constitution.†

6. That the missionary monks should discontinue immediately the government and administration of the property of the Indians, who should choose by means of their *ayuntamientos*, with intervention of

* "Collections of Decrees of the Spanish Cortes, reputed in force in Mexico." Mexico, 1829, p. 106.

†The following is the clause referred to, namely, paragraph 10, art. 335, Constitution of the Spanish Monarchy, 1812:

"The provincial councils of the provinces beyond sea shall attend to the order, economy, and progress of the missions for the conversion of infidel Indians, and to the prevention of abuses in that branch of administration. The commissioners of such missions shall render their accounts to them, which accounts they shall in their turn forward to the government."

This clause of itself settles the character of these establishments, as a branch of the public administration.

the superior political authority, persons among themselves competent to administer it; the lands being distributed and reduced to private ownership, in accordance with the decree of the 4th January, 1813, on reducing vacant and other lands to private property."*

It has also been supposed, that the act above alluded to of the Mexican Congress, [act of 17th August, 1833,] was the first assertion by the Mexican government of property in the missions, or that they by that act first became [or came to be considered] national domain. But this is likewise an error. The Mexican government has always asserted the right of property over all the missions of the country, and I do not think that the supposition has ever been raised in Mexico, that they were the property of the missionaries or the church.

The General Congress of Mexico, in a decree of the 4th August, concerning the public revenue, declares the estates of the inquisition, as well as all temporalities, to be the property of the nation; [that is no doubt, in contradistinction from property of the States—making no question of their being public property.] This term would include not only the mission establishments, but all rents, profits, and income the monks receive from them. A like act of the 7th July, 1831, again embraces the estates of the inquisition and temporalities as national property. and places them with "other rural and suburban estates," under charge of a director general. The exclusive regulations for colonizing the Territories may raise an idea of territorial and native property in them, but it puts out of the question any proprietary right in the missionaries.

The 17th article of these regulations, [executive regulations for colonization of the Territories, adopted 21st November, 1828,] relates to the missions, and directs that, "in those Territories where there are missions, the lands which they occupy shall not at present be colonized, nor until it be determined if they ought to be considered as property of the settlements of the neophyte-catechumens and Mexican settlers."

The subsequent acts and measures of the general government of Mexico in direct reference to missions, and affecting those of California, are briefly as follows:

A decree of the Mexican Congress of 20th November, 1833, in part analogous to the decree before quoted of the Spanish Cortes of

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* "Collection of Decrees of the Spanish Cortes," &c., p. 56. This decree provides:

1. That "all the vacant or royal lands, and town reservations, (*propios y arbitrios*, lands reserved in and about towns and cities for the municipal revenue) both in the peninsula and islands adjacent, and in the provinces beyond sea, except such commons as may be necessary for the villages, shall be converted into private property; provided, that in regard to town reservations some annual rents shall be reserved."

2. That "in whatever mode these lands were distributed, it should be in full and exclusive ownership, so that their owners may enclose them, (without prejudice of paths, crossings, watering-places, and servitudes,) to enjoy them freely and exclusively, and destine them to such use or cultivation as they may be best adapted to; but without the owners ever being able to entail them, or to transfer them, at any time or by any title in *mortmain*."

3. "In the transfer of these lands shall be preferred the inhabitants of the villages, (or settlements,) in the neighborhood where they exist, and who enjoyed the same in common while they were vacant."

September, 1813, directing their general secularization, and containing these provisions:

1. The government shall proceed to secularize the missions of Upper and Lower California.

2. In each of said missions shall be established a parish, served by a curate of the secular clergy, with a donation of two thousand to two thousand five hundred dollars, at the discretion of the government.

4. The mission churches, with the sacred vessels and ornaments, shall be devoted to the uses of the parish.

5. For each parish, the government shall direct the construction of a cemetery outside of the village.

7. Of the buildings belonging to each mission, the most fitting shall be selected for the dwelling of the curate, with a lot of ground not exceeding two hundred varas square, and the others appropaiated for a municipal house and schools.

On the 2d December, 1833, a decree was published to the following effect:

"The government is authorized to take all measures that may assure the colonization, and make effective the secularization of the missions of Upper and Lower California, being empowered to this effect to use, in the manner most expedient, the *fincas de obras pias* (property of the piety fund) of those territories, to aid the transportation of the commission and families who are now in this capital destined thither."

The commission and emigrants, spoken of in this circular, were a colony under the charge of Don Jose Maria Hijar, who was sent the following spring, (of 1834,) as director of colonization, with instructions to the following effect: That he should "make beginning by occupying all the property pertinent to the missions of both Californias;" that in the settlements to be formed, special care should be taken to include the indigenous (Indian) population, mixing them with the other inhabitants, and not permitting any settlement of Indians alone; that topographical plans should be made of the squares which were to compose the villages, and in each square building-lots be distributed to the colonist families; that outside the villages there should be distributed to each family of colonists, in full dominion and ownership, four *caballerias** of irrigable land, or eight, if dependent on the seasons, or sixteen if adapted to stock raising, and also live stock and agricultural implements; that this distribution made, (out of the movable property of the mission,) one-half the remainder of said property should be sold, and the other half reserved on account of government, and applied to the expensesof worship, maintenance, of the missionaries, support of schools, and the purchase of agricultural implements for gratuitous distribution to the colonists.

On the 16th April, 1834, the Mexican Congress passed an act to the following effect:

1. That all the missions in the republic shall be secularized.

2. That the missions shall be converted into curacies, whose limits shall be demarked by the governors of the States where said missions exist.

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*A *caballeria* of land is a rectangular parallelogram of 562 varas by 1,104 varas

3. This decree shall take effect within four months from the day of its publication.

The 7th November, 1835, an act of the Mexican Congress directed, that "until the curates mentioned in the second article of the law of 17th August, 1833, (above quoted,) should take possession, the government should suspend the execution of the other articles, and maintain things in the condition they were before said law."

I have, so far, referred to these various legislative and governmental acts in relation to the missions, only to show, beyond equivocation or doubt, the relation in which the government stood toward them, and the rights of ownership which it exercised over them. My attention was next directed to the changes that had taken place in the condition of those establishments, under the various provisions for their secularization and conversion into private property.

Under the act of the Spanish Cortes of September, 1813, all the missions in New Spain were liable to be secularized; that is, their temporalities delivered to lay administration; their character as *missions* taken away by their conversion into parishes under charge of the secular clergy; and the lands pertinent to them to be disposed of as other public domain. The question of putting this law in operation with regard to the missions in California was at various times agitated in that province, and in 1830, the then governor, Echandria, published a project for the purpose, but which was defeated by the arrival of a new governor, Victoria. Victoria revoked the decree of his predecessor, and restored the missionaries to the charge of the establishments, and in their authority over the Indians. Subsequent to that time, and previous to the act of secularization of August, 1833, nothing further to that end appears to have been done in California. Under that act the first step taken by the Central Government was the expedition of Hijar, above noticed. But the instructions delivered to him were not fulfilled. Hijar had been appointed Governor of California, as well as Director of Colonization, with directions to relieve Governor Figueroa. After Hijar's departure from Mexico, however, a revolution in the Supreme Government induced Hijar's appointment as political governor to be revoked; and an express was sent to California to announce this change, and with directions to Figueroa to continue in the discharge of the governorship. The courier arrived in advance of Hijar, who found himself, on landing, (in September, 1834,) deprived of the principal authority he had expected to exercise. Before consenting to co-operate with Hijar, in the latter's instructions concerning the missions, Figueroa consulted the Territorial Deputation. That body protested against the delivery of the vast property included in the mission estates—and to a settlement in which the Indian pupils had undoubtedly an equitable claim—into Hijar's possession, and contended that his authority, in the matter of the missions, depended on his commission as governor, which had been revoked, and not on his appointment (unknown to the law) as Director of Colonization. As a conclusion to the contestation which followed, the governor and assembly suspended Hijar from the last mentioned appointment, and returned him to Mexico.*

*Manifiesto a la Republica Mejicana, que hace el General Jose Figueroa, commandante general y gefe politico de la Alta California. Montery, 1835.

Figueroa, however, had already adopted (in August, 1834) a project of secularization, which he denominates a "Provisional Regulation." It provided that the missions should be converted partly into pueblos or villages, with a distribution of lands and movable property as follows: to each individual, head of a family, over twenty-five years of age, a lot of ground not exceeding four hundred nor less than one hundred varas square, in the common lands of the missions with a sufficient quantity in common for pasturage of the cattle of the village, and also commons and lands for municipal uses; likewise, among the same individuals, one-half of the live stock, grain, and agricultural implements of the mission; that the remainder of the lands, immovable property, stock, and other effects, should be in charge of mayordomos or other persons appointed by the governor, subject to confirmation by the general government; that from this common mass should be provided the maintenance of the priests and expenses of religious service, and the temporal expenses of the mission; that the minister should choose a place in the mission for his dwelling; that the emancipated Indians should unite in common labors for the cultivation of the vineyards, gardens, and field lands, which should remain undivided until the determination of the Supreme government; that the donees, under the regulation, should not sell, burthen, or transfer, their grants, either of land or cattle, under any pretext; and any contracts to this effect should be null, the property reverting to the nation, the purchaser losing his money; that lands, the donee of which might die without leaving heirs, should revert to the nation; that *rancherias* (hamlets of Indians) situated at a distance from the missions, and which exceed twenty-five families, might form separate pueblos, under the same rules as the principal one. This regulation was to begin with *ten* of the missions, (without specifying them,) and successively be applied to the remaining ones.

The deputation, in session of the 3d of November of the same year, (1834,) made provision for dividing the missions and other settlements into parishes or curacies, according to the law of August, 1833; authorized the missionary priests to exercise the functions of curates, until curates of the secular clergy should arrive, and provided for their salaries and expenses of worship. No change was made, in this act, in the regulations established by Governor Figueroa, for the distribution and management of the property.

Accordingly, for most or all of the missions, administrators were appointed by the governor; and in some, but not all, partial distributions of the lands and movable property were made, according to the tenor of the regulation. From this time, however, all tracts of lands pertinent to the missions, but not directly attached to the mission buildings, were granted, as any other lands of the territory, to the Mexican inhabitants, and to colonists, for stock farms and tillage.

The act of the Mexican Congress of 1835, directing the execution of the decree of 1833 to be suspended until the arrival of curates, did not, as far as I could ascertain, induce any change in the policy already adopted by the territorial authorities.

On the 17th January, 1839, Governor Alvarado issued regulations for the government of the administrators of the missions. These regulations prohibited the administrators from contracting debts on ac-

count of the missions; from slaughtering cattle of the missions, except for consumption, and from trading the mission horses or mules for clothing for the Indians; and likewise provided for the appointment of an inspector of the missions, to supervise the accounts of the administrators, and their fulfilment of their trusts. Art. 11 prohibited the settlement of white persons in the establishments, "whilst the Indians should remain in community." The establishments of San Carlos, San Juan Bautista and Sonoma were excepted from these regulations, and to be governed by special rules.

On the first of March, 1840, the same governor, Alvarado, suppressed the office of administrators, and replaced them by *mayordomos*, with new and more stringent rules for the management of the establishments; but not making any change in the rules of Governor Figueroa, regarding the lands or other property.

By a proclamation of the 29th March, 1843, Governor Micheltorena, "in pursuance (as he states) of an arrangement between the governor and the prelate of the missions," directed the following named missions to be restored to the priests "as tutors to the Indians, and in the same manner as they formerly held them," namely: the missions of San Diego, San Luis Rey, San Juan Capistrano, San Gabriel, San Fernando, San Buenaventura, Santa Barbara, Santa Ynes, La Purisima, San Antonio, Santa Clara, and San Jose. The same act set forth, that, "as policy made irrevocable what was already done," the missions should not reclaim any lands hitherto granted; but should collect the cattle and movable property which had been lent out either by the priests or administrators, and settle in a friendly way with the creditors; and likewise regather the dispersed Indians, except as such had been legally emancipated, or were at private service. That the priests might provide out of the products of the missions for the necessary expenses of converting, subsisting, and clothing the Indians, for a moderate allowance to themselves, economical salaries to the *mayordomos*, and the maintenance of divine worship; under the condition, that the priests should bind themselves in honor and conscience to deliver to the public treasury one-eighth part of all the annual products of the establishments. That the Departmental government would exert all its power for the protection of the missions, and the same in respect to individuals, and to private property, securing to the owners the possession and preservation of the lands they now hold, but promising not to make any new grants without consulting with the priests, unless where the lands were notoriously unoccupied, or lacked cultivation, or in case of necessity.

Micheltorena's governorship was shortly after concluded. There had been sent to this Department with him a considerable body of persons, called *presidartos*, that is, criminals condemned to service—usually, as in this case, military service on the frontier—and their presence and conduct gave such offence to the inhabitants, that they revolted, and expelled him and the presidarios from the country. He was succeeded by Don Pio Pico, in virtue of his being the "first vocal" of the Department Assembly,* and also by choice of the inhabitants, afterward confirmed by the central government, which, at

*According to act of the Mexican Congress of 6th of May, 1822, to provide for supplying the place of provincial governors, in default of an incumbent.

the same time, gave additional privileges to the Department, in respect to the management of its domestic affairs.

The next public act which I find, in relation to the missions, is an act of the Departmental Assembly, published in a proclamation of Governor Pico, 5th June, 1845. This act provides: 1. That the governor should call together the neophytes of the following named missions: San Rafael, Dolores, Soledad, San Miguel, and La Purisima; and in case those missions were abandoned by their neophytes, that he should give them one month's notice, by proclamation, to return and cultivate said missions, which if they did not do, the missions should be declared abandoned, and the assembly and governor dispose of them for the good of the Department. 2. That the missions of Carmel, San Juan Capistrano, and San Francisco Solano, should be considered as *pueblos*, or villages, which was their present condition; and that the property which remained to them, the governor, after separating sufficient for the curate's house, for churches, and their pertinences, and for a municipal house, should sell at public auction; the product to be applied, first, to paying the debts of the establishments, and the remainder, if any, to the benefit of divine worship. 3. That the remainder of the missions to San Diego, inclusive, should be rented, at the discretion of the governor, with the proviso, that the neophytes should be at liberty to employ themselves at their option on their own grounds, which the governor should designate for them, in the service of the rentee, or of any other person. 4. That the principal edifice of the mission of Santa Barbara should be excepted from the proposed renting, and in it the governor should designate the parts most suitable for the residence of the bishop and his attendants, and of the missionary priests then living there; moreover, that the rents arising from the remainder of the property of said mission should be disbursed, one-half for the benefit of the church and its ministry, and the other for that of the Indians. 5. That the rents arising from the other missions should be divided, one-third to the maintenance of the minister, one-third to the Indians, one-third to the government.

On the 28th October, of the same year, (1845,) Governor Pico gave public notice for the sale, to the highest bidder, of five missions, to wit: San Rafael, Dolores, Soledad, San Miguel, and La Purisima; likewise, for the sale of the remaining buildings in the pueblos (formerly missions) of San Luis Obispo, Carmel, San Juan Bautista, and San Juan Capistrano, after separating the churches and their appurtenances, and a curate's, municipal, and school houses. The auctions were appointed to take place—those of San Luis Obispo, Purisima, and San Juan Capistrano, the first four days of December following, (1845;) those of San Rafael, Dolores, San Juan Bautista, Carmel, Soledad, and San Miguel, the 23d and 24th of January, 1846; meanwhile, the government would receive and take into consideration proposals in relation to said missions.

In the same proclamation, Pico proposed to rent to the best bidder, for a period of nine years, and under conditions for the return of the property in good order and without waste, the missions of San Fernando, San Buenaventura, Santa Barbara, and Santa Ynes; the rentings to include all the stock, agricultural tools, vineyards, gardens, offices, and whatever, in virtue of the inventories, should be appur-

tenant to said missions, with "the exception only of those small pieces of ground which have always been occupied by some Indians of the missions;" likewise to include the buildings, saving the churches and their appurtenances, and the curate's, municipal, and school houses, and except in the mission of Santa Barbara, where the whole of the principal edifice should be reserved for the bishop and the priests residing there. The renting of the missions of San Diego, San Luis Rey, San Gabriel, San Antonio, Santa Clara, and San Jose, it was further announced, should take place as soon as some arrangement was made concerning their debts. It was also provided that the neophytes should be free from their pupilage, and might establish themselves on convenient parts of the missions, with liberty to serve the rentee, or any other person; that the Indians who possessed pieces of land, on which they had made their houses and gardens, should apply to the government for titles, in order that their lands might be adjudicated to them in ownership; "it being understood that they would not have power to sell their lands, but that they should descend by inheritance."

On the 30th March, 1846, the Assembly passed an act—

1. Authorizing the governor, in order to make effective the decree of 28th May previous, to operate as he should believe most expedient to prevent the total ruin of the missions of San Gabriel, San Luis Rey, San Diego, and others found in like circumstances. 2. That as the remains of said establishments had large debts against them, if the existing property was not sufficient to cover the same, they might be put into bankruptcy. 3. That if, from this authorization, the governor, in order to avoid the destruction to which the said missions were approaching, should determine to sell them to private persons, the sale should be by public auction. 4. That when sold, if, after the debts were satisfied, there should be any remainder, it should be distributed to the Indians of the respective establishment. 5. That, in view of the expenses necessary in the maintenance of the priest, and of divine worship, the governor might determine a portion of the whole property, whether of cultivable lands, houses, or of any other description, according to his discretion, and by consultation with the respective priests. 6. The property thus determined should be delivered as by sale, but subject to a perpetual interest of four per cent. for the uses above indicated. 7. That the present act should not affect any thing already done or contracts made in pursuance of the decree of 28th May last, nor prevent any thing being done conformable to that decree. 8. That the governor should provide against all impediments that might not be foreseen by the act, and in six months at farthest, give an account to the assembly of the results of its fulfilment.

Previous to several of the last mentioned acts, that is, on the 24th August, 1844, the Departmental Assembly, in anticipation of a war breaking out, passed a law, authorizing the governor, on the happening of that contingency, either "to sell, hypothecate or rent the houses, landed property and field lands of the missions, comprehended in the whole extent of the country from San Diego to Sonoma," except that of Santa Barbara, "reserved for the residence of the bishop."

These comprise all the general acts of the authorities of California which I was able to meet with, on the subject of the missions. Of the extent or manner in which they were carried into execution, so far as the missions proper—that is, the mission buildings and lands appurtenant—are concerned, but little information is afforded by what I could find in the archives. A very considerable part, however, of the grants made since the act of secularization of 1833, (comprising the bulk of all the grants in the country,) are of lands previously recognised as appurtenances of the missions, and so used as grazing farms, or for other purposes. In some cases, the petitions for such grants were referred to the principal priest at the mission to which the land petitioned for was attached, and his opinion taken whether the grant could be made without prejudice to the mission. In other cases, and generally, this formality was not observed. This remark relates to the farms and grazing grounds (*ranchos*) occupied by the missions apart from the lands around the mission buildings. There are, however, some grants in the immediate precincts of the missions, and some titles to Indians, pursuant to the regulation of Governor Figueroa; and the proclamation of Governor Pico, of record in the file of *expedientes* of grants before noticed.

What I have been able to gather from the meagre records and memoranda in the archives, and from private information and examination of the actual state of the missions, is given below. It is necessary to explain, however, still farther than I have, that in speaking of the missions now we cannot understand the great establishments which they were. Since 1833, and even before, farms of great (many leagues) extent, and many of them, have reduced the limits they enjoyed, in all cases very greatly, and in some instances into a narrow compass; and while their borders have been thus cut off, their planting and other grounds inside are dotted to a greater or less extent by private grants. The extent to which this has been the case can only be ascertained by the same process that is necessary every where in California to separate public from private lands, namely, authorised surveys of the grants according to their calls, which, though not defined, will almost always furnish some distinguishable natural object to guide the surveyor. The actual condition of the establishments, understanding them in the reduced sense above shown, was, at the time the Mexican government ceased in California, and according to the best information I could obtain, as follows:

MISSIONS.	WHERE SITUATED.	
San Diego, - -	32° 48'	Sold to Santiago Arguello, 8 June, 1846.
San Luis Rey, -	33° 03'	Sold to Antonio Cot and Andres Pico, May 13, 1846.
San Juan Capistrano,	33° 26'	Pueblo, and remainder sold to John Foster and James McKinley, 6 December, 1845.
San Gabriel, - -	34° 10'	Sold to Jul'n Workman and Hugo Reid, 18th June, 1846.
San Fernando -	34° 16'	Rented to Andres Pico, for 9 years, from December, 1845, and sold to Juan Celis, June, 1846.

San Buenaventura,	34°	36'	Sold to Joseph Arnaz.
Santa Barbara, -	34°	40'	Rented for 9 years, from June 8, 1846, to Nicholas Den.
Santa Ynes -	34°	52'	Rented to Joaquin Carillo.
La Purisima, - -	35°	00'	Sold to John Temple, December 6, 1845.
San Luis Obispo -	35°	36'	Pueblo.
San Miguel - -	35°	48'	Uncertain.
San Antonio, -	36°	30'	Vacant.
Soledad, - -	36°	38'	House and garden sold to Sobranes, January 4, 1846.
Carmel, - -	36°	44'	Pueblo.
San Juan Bautista, -	36°	58'	Pueblo.
Santa Cruz, -	37°	00'	Vacant.
Santa Clara, - -	37°	20'	In charge of priest.
San Jose, - -	37°	30'	In charge of priest.
Dolores, - -	37°	58'	Pueblo.
San Rafael, -	38°	00'	Mission in charge of priest.
San Francisco Solano,	38°	30'	Mission in charge of priest.

The information above given concerning the condition of the missions, at the time of the cessation of the former government, is partly obtained from documents in the archives, and partly from private sources. What is to be traced in the archives is on loose sheets of paper, liable to be lost; and parts, quite likely, have been lost; there may also be some papers concerning them which, in the mass of documents, escaped my examination. I have no doubt, however, of the exactness of the statement above given, as far as it goes.

It will be seen, then, that the missions—the principal part of their lands cut off by private grants, but still, no doubt, each embracing a considerable tract—perhaps from one to ten leagues—have, some of them, been sold or granted under the former government, and become private property; some converted into villages, and consequently granted in the usual form in lots to individuals and heads of families; a part are in the hands of rentees, and at the disposal of the government when these contracts expire; and the remainder at its present disposal.

If it were within my province to suggest what would be an equitable disposition of such of the missions as remain the property of the Government, I should say that the churches, with all the church property and ornaments; a portion of the principal building for the residence of the priest, with a piece of land equal to that designated in the original act of the Mexican Congress for their secularization, (to wit, two hundred varas square,) with another piece for a cemetery, should be granted to the respective Catholic parishes, for the usages specified; and the remainder of the buildings, with portions of land attached, for schools or municipal or county purposes; and for the residence of the Bishop, the same allotment at the mission of Santa Barbara that was made in the last proclamation of Governor Pico. The churches, certainly, ought not to be appropriated to any other use; and less than I have suggested, would, I think, be less than equity and justice, and less than the inhabitants have always considered and enjoyed as their right.

MISSOURI WINE.—THE KAYSER PREMIUM FOR 1849.

The wine grower's exhibition which took place in St. Louis on the 4th day of May, 1850, was calculated to sustain the favorable opinion which we have heretofore entertained and expressed in respect to grape growing in Missouri.

Twenty-two individuals entered the list as candidates for the premium of one hundred dollars, offered by Alexander Kayser, Esq., to the producer of the best specimen of Missouri wine, of the vintage of 1849, and twenty seven samples were submitted to the committee of gentlemen, selected by Mr. Kayser to award the premium.

Of these samples, about one half were so nearly of equal merrit, that it was difficult for individuals of limited experience in the use of wine, to decide between them. The premium was awarded to Mr. Jacob Romel, of Hermann. The sample chosen by the committee as the best, was a specimen of white wine, the pure juice of the Catawba grape. This is the "MISSOURI ORE BLOSSOM," a name selected by Mr. Kayser, when he proposed the premium.

Mr. Romel also exhibited a sample of red wine, which he calls the "Missouri Bird's Eye," made from a grape described in the following letter:

Hermann, March 31, 1850.

ALEXANDER KAYSER, ESQ.:

Dear Sir—Accompanying, permit me to transmit to you, two samples of the wine raised by my own hands during 1849, in Hermann, for your advertised exhibition of the present year.

Bottle labeled "B. E., 99," is here known by the name of "Missouri Bird's Eye."

Bottle labeled "C. A., 100," is pure Catawba; both, as before mentioned, were raised by myself in the year 1849.

Situation of the vineyard: Easterly, on a moderate slope.
Soil " " : Loamy, with admixture of sand.
Quantity of Vintage in 1849, of "B. E., 99:" 2 gallons.
" " " "C. A., 100:" 100 do.

With regard to the "Missouri Bird's Eye," I would add, that the grapes are not at all liable to the rot—are closely clustered; the berry is of the size of a wild cherry, well flavored, very juicy, and containing no pulp. It cannot be transplanted by slips; the new vines are produced by so termed layers.

Respectfully, JACOB ROMEL.

We regret that Mr. Romel did not give an account of his mode of culture and manufacture; and, especially, that his description of the grape from which he made his red wine was not more in detail. We infer that this is one of our own native varieties, and we should be pleased to know how it compares with the Catawba, and other cultivated American grapes, in point of productiveness; and whether the small size of the berry is of any material disadvantage in gathering and preparing the fruit for the wine press. The wine from this grape, though not considered by the committee as equal to fair samples of the Catawba, is nevertheless of very respectable quality, and

with improved management, may constitute a valuable addition to our catalogue of American varieties. We trust that Mr. Romel will favor us with a full account of its bearing and wine making qualities.

All the specimens exhibited were the produce of the Catawba grape, except the red wine above mentioned, and a sample produced from the risling, a foreign variety; and with, perhaps, one or two exceptions, were of the pure juice. They resemble, in some respects, the German wines, from the valley of the Rhine, but are said to exceed them in weight.

The better qualities of Missouri wine sell readily in St. Louis at $2 per gallon, and we are persuaded that, in time, the valley of the Missouri will rival that of the Rhine, in the productiveness and quality of its wines.

In connection with this subject we beg to suggest the policy of holding a wine grower's convention, at which every part of the south and west interested in the cultivation of the grape, shall be represented. Such a convention would afford an opportunity to individuals from different parts of the country, to compare notes, and enable each to profit by the observations and experience of the other. It would incite a spirit of emulation, popularise the use of American wines, and remove the prejudices which so generally prevail in favor of those of foreign production.

CULTURE OF THE GRAPE.—PROFIT OF VINEYARDS.

The following communication, from R. Buchanan, Esq., ex-president of the Cincinnati Horticultural Society, addressed to Charles Cist, Esq., editor of the "Advertiser," will be found useful to all who are interested in the cultivation of the vine. We publish it, more especially, for the benefit of those who cultivate a few vines for the use of the table. The frequent disappointments of this class of grape growers, occasioned by unskilful management, has been the chief cause of retarding the progress of grape growing in the United States. For, were these cultivators of a few vines uniformally successful, many of them would be encouraged to extend their vineyards, and in time become manufacturers of wine.

CULTURE OF THE GRAPE.

Cincinnati, Feb. 10, 1849.

Dear Sir: At your request, I now give you the mode adopted by myself, and some others in this vicinity, in cultivating the vine for wine making.

At the same time, I feel that it would come with greater propriety from Mr. Longworth, to whom, more than to any other man in the West, we are all indebted for our knowledge in grape culture.

Selecting and preparing the ground.—A hill side, with a southern aspect, is preferred. If the declivity is gentle, it can be drained by sodded, concave avenues; but if too steep for that, it must be benched or terraced, which is more expensive.

In the autumn and winter, dig or trench the ground with a spade all over, two feet deep, turning the surface under. The ground will be mellowed by the frosts of winter.

Planting.—Lay off the ground in rows, three by six feet; put down a stick twelve or fifteen inches long, where each vine is to grow.

The avenues shall be ten feet wide, dividing the vineyard into squares of one hundred and twenty feet. Plant at each stick two cuttings, separated five or eight inches at the bottom of the whole, but joined at the top—throw a spadeful of rich vegetable mould into each hole, and let the top eye of the cutting be even with the surface of the ground, and, if the matter is dry, cover with half an inch of light earth.

The cuttings should be prepared for planting by burying them in the earth immediately after pruned from the vines in the spring; and, by the latter end of March or early in April, which is the right time for planting, the buds will be swelled so as to make them strike root with great certainty. Cut off close to the joint at the lower end, and about an inch in all above the upper.

Pruning.—The first year after planting, cut the vines down to a single eye (some leave two;) the second, leave two or three; and the third, three or four. After the first year, a stake six and a half or seven feet long must be driven firmly down by each plant, to which the vines must be kept neatly tied with willow or straw as they grow. Late in February, or early in March, is the right time for spring pruning in this climate.

Summer pruning consists in breaking off the lateral sprouts and shoots, so as to leave two strong and thrifty canes or vines—one of which is to bear fruit the ensuing season, and the other to be cut down in spring pruning to a spur, to produce new shoots. These may be let to run to the top of the stakes, and trained from one to the other, until the wood is matured, say in August or September, when the green ends may be broken off. One of these vines is selected next spring for bearing fruit, and cut down to four or six joints, and bent over and fastened to the stake in the form of a bow. The other is cut away, as well as the fruit bearing wood of the last year, leaving spurs to throw out new wood for the next, and thus keeping the vine down to within one and a half to two feet of the ground. Nip off the ends of the fruit bearing branches two or three joints beyond the bunches of grapes, but do not take off any leaves.

If both the cuttings grow, take one up, or cut it off under ground, as but one vine should be left to each stake.

Culture.—The vineyard must be kept perfectly clean from weeds and grass, and hoed two or three times during the season. Keep the grass, in the avenues around, down close. About every third year put in manure, by a trench the width of a spade, and three or four inches deep, just above, and near each row; fill in with two or three inches of manure and cover up with earth.

Wine making.—Gather the grapes when very ripe, pick off the unsound and unripe berries. The bunches are then mashed in a mashing tub, or pressed through a small mill, breaking the skin but not the seed, and thrown into the press, and the screw applied until the skins are pressed dry.

Fermentation.—This process is very simple. The juice is put into clean casks in a cool cellar, and the casks filled within about four or five inches of the bung, and the bung put on loosely. The gas escapes, but the wine does not run over. In from two to four weeks, generally, the fermentation ceases, and the wine clears; then fill up the casks and tighten the bungs. In February or March, rack off into clear casks. In the spring a moderate fermentation will again take place; after that, the wine fines itself, and is ready for bottling or barreling. Use no *brandy* or *sugar*, if the grapes are sound and well ripened. Keep bunged up or corked tight, and in a cool cellar, and the wine will improve by age for many years.

R. BUCHANAN.

Mr. Charles Cist.

STATISTICS.

Cost of my vineyard of six acres—fourteen thousand four hundred vines:

Trenching, two feet deep, $65 per acre,	$390
Sodding avenues,	60
Cost of 30,000 cuttings, at $2 50 per thousand,	75
Planting,	70
Fourteen thousand five hundred locust stakes, at $3 per hundred,	435
Setting 14,500 stakes,	55
	$1,085
Cost of attending the first year—vine dresser $216, and a hand for one month	$231
Second year—vine dresser, $216, and a hand for two months, at $15 per month	$246
Cutting after first year, to replace failures, say	20
Hauling, Carting &c.,	68
Contingencies, &c.,	150
Average cost, say $300 per acre	$1,800

The third year the vines will produce grapes enough to pay the expenses of that year,—generally more.

For the fourth year, and a series of eight or ten years in succession, the experience of the past would indicate the following calculation to be something like a fair one:

Say six acres, average 250 gallons, at rates heretofore $1 per gallon,		$1,500
Deduct cost of vine dresser per annum	$240	
Assistance, hoeing, &c,	60	
Gathering grapes and pressing,	150	
		$450
Net profit per annum,		$1,050

To attain this, the vineyard must be favorably situated, and well attended by a competent vine dresser, and free from the disastrous visitation of the rot.

Vine Culture in this Vicinity.—It is estimated that over three hundred acres are now planted with the vine, within a circuit 12 miles round Cincinnati; nearly two-thirds of which were in bearing last year, producing, notwithstanding the rot, so injurious to many, about 50,000 to 60,000 gallons of wine.

The Catawba is our *great* vine grape, and principally cultivated. The Isabella is not preferable for wine, and is only used for table use.

Mr. Longworth, with unwearied zeal and liberality, is still experimenting with new varieties, and may yet find a rival for the Catawba.

R. BUCHANAN.

MR. CHARLES CIST.

N. B. Some vineyards, in good seasons, have produced at the rate of six hundred to eight hundred gallons to the acre; but this is rare. The usual yield is three hundred to four hundred gallons, where there is but little rot. A bushel of grapes, if well ripened, will produce three and a half to four gallons of wine.

By proper economy, a man may have a vineyard of several acres in a few years, without feeling the expense to be burdensome. Commence by trenching one acre in the winter, and planting it out in the spring; next year another acre, and so on, for five or six years. After the first year, he will have his own cuttings from the first acre, and also, grapes enough to pay for the cost of planting the succeeding additions to his vineyard.

If he has suitable timber on his own land, the stakes can be got out in the winter, with but little outlay in money. By this course, the cost of a vineyard of six acres would not be half as much as mine.

Some prefer planting in rows, four by five—others, four and a half by four and a half; and on level land, three and a half by six, or even seven feet.

I have merely given, in the foregoing remarks, the course pursued by myself and some of my neighbors, without pretending that it is preferable to others. R. B.

COMMERCIAL STATISTICS.

From De Bow's Commercial Review.

DOMESTIC NAVIGATION.

Statement showing the number and class of vessels, and the tonnage thereof in each State and Territory of the United States, for the year ending on the 30th of June, 1849.

States.	*Class of vessels.* Ships.	Brigs.	Schooners.	Sloops and Canal boats.	Steamers.	Total number of ves. built.	*Total tonnage.* Tons.	Ninety-fifths.
Maine,	119	107	105	6	7	344	82,255	56
New Hampshire,	8		4			12	6.265	89
Massachusetts,	33	7	65	9	1	115	23,888	84
Rhode Island,	3	3	4	3		13	2,760	28
Connecticut,	2	1	38	14	1	56	5,066	26
New York,	17	8	64	155	21	265	44,104	26
New Jersey,		1	57	27	2	87	8,025	55
Pennsylvania,	3	2	27	102	63	197	24,207	73
Delaware,	1		17	5		23	1,880	36
Maryland,	9	9	129		5	152	17,402	93
District of Columbia,				22		22	600	20
Virginia,	1	2	32	1	2	38	3,094	65
North Carolina,	1	1	24	3		29	2.032	37
South Carolina,			6		2	8	655	57
Georgia,		1			1	2	756	37
Florida,			1			1	119	88
Alabama,			2	1		3	106	54
Louisiana,		1	12	4	4	21	1,755	48
Tennessee,					2	2	242	79
Kentucky,					34	34	8,423	33
Missouri,				8	11	19	2,886	51
Illinois.	1	3	9			13	2,210	84
Ohio,		2	9	8	44	63	12,816	92
Michigan,			15	2	8	25	5,148	66
Total,	198	148	623	370	208	1,547	256,377	47

Statement of the registered and enrolled tonnage of the United States, showing the tonnage employed in the whale fishery; also, the proportion of the enrolled and licensed tonnage employed in the coasting trade, cod fishery, mackerel fishery and whale fishery, from 1842 to 1849, inclusive.

	1842. *Tons*	95*ths.*	1843. *Tons*	95*ths.*
Registered tonnage,	975,358	74	1,009,305	01
Enrolled and licensed,	1,117,031	95	1,149,297	92
Total tonnage,	2,092,390	69	2,158,601	93
Registered tonnage of whale fisheries,	151,612	74	152,374	86

	1844.	1845.
Registered tonnage,	1,068,764 91	1,095,172 44
Enrolled and licensed,	1,211,330 11	1,321,829 57
Total tonnage,	2,250,095 07	2,417,002 06
Registered tonnage of whale fisheries,	168,293 63	190,695 55
	1846.	1847.
Registered tonnage,	1,131,256 40	1,281,312 92
Enrolled and licensed,	1,431,795 32	1,597,732 80
Total tonnage,	2,562,084 51	2,839.045 77
Registered tonnage in the whale fishery,	186 980 16	143,858 72
	1848.	1849.
Reistered tonnage,	1,360,846 85	1,438,941 53
Enrolled and licensed,	1,793,155 00	1,875,073 71
Total tonnage,	3,154,041 85	3,334,015 29
Registered tonnage in the whale fishery,	192,179 90	180,186 29

Proportion of the enrolled and licensed tonnage employed in the

	Coasting trade.	*Cod fishery.*	*Mackerel fishery.*	*Whale fishery.*
1842,	1,045,753 39	54,804 02	16,696 83	377 31
1843,	1,076,155 59	61,224 25	11,775 70	142 33
1844,	1,109,614 44	85,224 77	16,170 66	320 14
1845,	1,190,898 27	69,825 66	21,413 16	206 92
1846,	1,259,870 89	72,516 17	36,463 26	439 58
1847,	1,452'622 35	70,177 52	31,451 13	
1848,	1,620,988 16	82 651 82	44,538 78	432 75
1849,	1,731,410 84	73,882 00	49,942 02	

Condensed statement of tonnage of some of the principal ports of the United States.

Ports.	*Registered tonnage Tons. 95ths.*	*Enrolled and licensed tonnage Tons. 95ths.*	*Total tonnage Tons. 95ths.*
New York,	378,986 89	417,504 85	796,491 79
Boston,	247,336 14	49,553 85	296,890 04
New Bedford,	115,091 12	8,820 45	123,911 57
Bath,	61,938 38	26,882 46	88,820 84
Portland,	57,657 01	29,911 79	84,568 80
Philadelphia,	53,821 91	134,265 25	188,050 21
Baltimore,	79,682 31	53,343 04	134,025 00
New Orleans,	81,895 39	158,307 80	240,206 24
Charleston,	14,919 78	14,365 65	29,285 48
Wilmington,	10,873 94	5,767 88	16,641 87
Norfolk,	9,925 52	13,090 69	23,016 26
Mobile,	7,085 48	17,982 31	25,067 79
Buffalo,		40,667 34	
Pittsburgh,		35,770 63	
Detroit,		32,466 94	
St. Louis,		32,255 08	
Cuyah'ga,		30,047 11	
Oswego,		22,151 68	
Chicago,		17,332 43	
Cincinnati,		16,897 74	
Total,	1,438,941 53	1,895,073 71	3,334,015 29

Statement of the number of entrances of American and foreign vessels which entered into the several districts of the United States, from foreign countries, during the year ending 30th June, 1849.

	American vessels.	*Foreign vessels.*	*Total.*
Number,	11,208	8,992	20,200
Tons,	2,658,321	1,710,516	4,368,836
Crews—men,	105,718	87,033	192,751
" boys,	3,329	2,651	5,989

Statement of the number of clearances of American and foreign vessels, from ports of the United States, during the same.

	American vessels.	*Foreign vessels.*	*Total*
Number,	11,466	8,847	20,313
Tons,	2,753,724	1,675,809	4,429,433
Crews—men,	109,349	89,579	198,928
" boys,	3,422	2,704	6,126

COMMERCE OF CHILI.

The extensive intercourse which has recently been opened between Chili and California, has induced us to examine into the agricultural and commercial resources of that portion of South America bordering on the Pacific Ocean; but the information which we have been able to obtain from the latest commercial authorities, is so vague that we scarcely regard it as worthy of publication.

The following letter, to the Philadelphia *American*, from Wm. G. Morehead, late United States Consul at Valparaiso, contains more practical and useful information relating to the production of wheat and manufacture of flour in Chili, than we have been able to obtain from any other source:

VALPARAISO, March 6, 1850.

"An arrangement has been effected, within a few days past, between the millers of Chili and a company of responsible and highly respectable merchants of this city and San Francisco, for the supply of the California market with flour.

The production of wheat in Chili is very great, and this present year much larger than usual, for the reason that the demand for Chili flour in California, at the commencement of the past year, with a prospect of its continued and rapid increase, and thus furnishing a certain market, induced the agriculturists throughout the country to appropriate to the growth of wheat much more of their land than heretofore, when the demand was limited to this coast. The harvest that has just been secured (I am informed) has well rewarded the husbandman, the crop being very large. The price of wheat is, therefore, comparatively low, 25 to 31 1-4 cents per bushel in the interior on the delivery at the mills. There are produced in Chili some 50,000 to 55,000 bbls of superfine flour for export, monthly, all of which must find markets in the Pacific—the principal being California. The

great fluctuations that have frequently occurred in the market, during the past year, the price of flour varying from less than the cost of placing it there to $30, $40 and even $50 per bbl., have induced the millers to enter into the arrangement alluded to above, by which they (the millers) bind themselves to supply to this company the entire product of their mills, at the price of $4.44 per bbl., delivered in the warehouse for shipment.

The company have a large and commodious warehouse at San Francisco, at which they are bound to keep a regular and constant supply of flour, adequate at all times, to meet the demand, and to dispose of the same at a moderate profit,—thus securing to the citizens of California a supply of the staff of life at a very low price. The consumption of that market is estimated by these gentlemen to be not less than 25,000 bbls. per month at present, calculating an increase of, say 5,000 bbls. monthly.

The first shipment of flour, under the above arrangemement, will take place within two weeks, and thereafter regularly, commencing with 25,000 bbls. per month.

The extent of wheat-growing estates in this country, far exceeds anything I had ever conceived. The flour exported from the United States, in consequence of the very long voyage round Cape Horn, and crossing the line twice, has, I believe, with very little exception, been unfit for use, and was thrown overboard in the bay of San Francisco."

From this account it would seem that wheat is produced in Chili as cheap as in any other part of the globe; and whatever may be the extent of the demand in California, it is not likely that any of the wheat-growing States of the Union could compete with Chili in that market, even were a ship canal completed across the Isthmus.

We extract from "McGregor's Progress of America" the following Table, showing an approximate calculation of the annual quantity and value of Chilian native productions, including the precious metals exported from Chili in 1836 and 1839, both inclusive.

	Quantity.	*Price. Dols. rls.*	*Value. Dollars.*
Silver in bars, marcs, - -	128,580	10 0	1,285,000
Silver in Chilian coins, marcs, -	6,240	10 0	62,400
Gold in bars, marcs, - - -	1,130	128 0	144,640
Gold in Chilian coin, marcs, -	3,281	128 0	419,968
Copper in bars, quintals, - -	61,797	15 0	926,955
Copper ore, " - -	223,922	2 4	559,805
Estimated returns in bills, for supplies to foreign shipping, and salaries to diplomatic and consular agents,			800,000
Other Chilian articles of export, as wheat, flour, hides, cow-horns, wood, hemp, building timber, Chili hams, nuts and tallow,			1,500,000
Total, - - - - -			$5,699,768

Note.—Though McGregor has published a great deal of statistical matter relating to the commerce of Chili he has given no complete table of exports since 1839. The population of Chili is estimated at about one million three hundred thousand, exclusive of the Araucanians or native Indians, who maintained their independence against the Spaniards.

We find the following tables of the exports of copper, copper ore, silver and gold, from Chili, in the New York Herald, which purports to have been extracted from the Valparaiso Neighbor, of August 29th, 1849.

	Bars.		Regulus.		Ores.	
	Qqls.	*Value.*	*Qqls.*	*Value.*	*Qqls.*	*Value.*
1841	95,331	——	——	——	258,219	——
1842	77,537	——	——	——	367,964	——
1843	73,898	——	——	——	426,473	——
1844	86,418	——	110,490	418,986	205,633	374,003
1846	130,576	1'778,525	103,116	346,504	214,474	378,796
1847	140,893	1,889,253	86,202	298,667	94,577	166,485

The production of silver forms another branch of the mining interest. Discoveries of mines of great richness have been made almost continually for two or three years. Gold also will, to some extent, enter into the account. The numbers in regard to the export of silver and gold for the last seven years, (excepting one year, which is not at hand) are as follows :—

	Silver.				Gold Bullion.	
	Bars.		Ores.			
	Marks.	*Value.*	*Qqls.*	*Value.*	*Castev'os.*	*Value.*
1841	140,123	——	——	——	48,110	——
1842	148,283	——	——	——	124,800	——
1843	115,688	——	——	——	16,510	——
1844	118,598	1,310,996	——	——	319,600	97,097
1846	176,112	1,773,949	1,054	2,635	80,740	217,984
1847	176,285	1,798,083	1,187	9,628	112,205	301,415

From "McGregor's Progress of America."

Estimate of annual average value of the exports to all parts of the world, of native productions, including the precious metals, from Chili, Bolivia, Peru, Ecuador, and from the ports of New Grenada, Central America and Mexico, situated along the Pacific coast.

Chili,	$6,000,000	New Granada,	$150,000
Bolivia,	2,000,000	Central America,	500,000
Peru,	8,000,000	Mexico,	4,000,000
Ecuador,	1,500,000		
Total, . - - - - -			$22,150,000

COMMERCIAL REGULATIONS.

The following regulations for the delivery of freight, &c., in St. Louis, were adopted by a meeting of merchants, subscribers of the St. Louis Exchange, on the 22d of April, 1850. It is, doubtless, important to owners of property, as well as those engaged in the details of receiving, storing, &c., that some well defined and uniform custom governing such matters, should be understood and observed. Our acquaintance with the details of business, at our wharf, is not sufficient to enable us to judge whether these regulations are the best that could be devised, or not. The merchants are presumed to be the best judges of the matter.

In connection with this subject, we publish an act of the Legislature of Missouri, respecting Steamboats, approved March 12, 1849:

PROCEEDINGS OF THE MERCHANTS' MEETING.

At an adjourned meeting of the subscribers of the Merchants' Exchange, held at the Exchange rooms, on Monday evening, April 22d, on motion, George Partridge, Esq., was appointed chairman, and George DeBaun, jr., secretary.

After the object of the meeting being explained by the chairman, the following preamble and resolutions were offered by E. F. Pittman, Esq., on the part of the committee; which were fully discussed and unanimously adopted:

As our city is becoming a great mart for the sale of produce of nearly every description, it is an important matter that the rules and regulations of trade be as well defined as possible, and understood alike by all.

Few will deny that the delivery and reception of produce and merchandise upon the levee, whether received from boats or delivered to purchasers, has long since been a matter of general complaint. Losses are daily occurring, produce damaged, and many inconveniences, the result of a system so loose as the present.

The better to define a few points of general interest, and to serve as custom, where no agreement is made to the contrary, be it resolved by the Merchants' Exchange of St. Louis:

1. That it shall be incumbent upon steam and other boats to "deposit" their freight in "suitable weather," as they are required to do by an act of the State of Missouri, entitled "an Act respecting steamboats."

If our packets and other boats will discharge their cargoes in the rain, or when the clouds strongly threaten an early shower, and the produce or merchandise shall be damaged by such exposure before it can be removed from the levee or secured against loss, the boat so offending shall be held by consignees for all the damages that may accrue on the produce so exposed.

2. That the words "deposit any freight in proper manner, and in *good condition* on the wharf," to be found also in "an Act respecting steamboats," can not be construed reasonably to mean anything else

than that such articles are liable to be damaged; such as grain of all kinds, flour, tobacco, hemp, &c., shall be dunnaged in such a manner as to protect them from running water, should it rain before it is taken from the levee.

When the freight is thus deposited, it *then* becomes the duty of the boat to give the consignees verbal or written notice that their freight is ready for delivery.

After which, it shall be the duty of the consignees to go and receive their consignments, if they be placed upon the levee in such a manner that the property can be recognised, and number of packages counted; if so, it shall, on counting and finding it correct, be considered a delivery. If it be not so placed, then the parties are to abide the weigher's certificate, or the count as it is removed from the levee. It is understood, however, that nothing in this resolution shall be construed so as to release the boat from any damages she may be justly liable for, although there may have been an implied delivery of the whole.

3. That when consignees have a good reason to believe that a lot or lots of their freight are out according to law, as explained in the first and second resolutions, that it shall be their duty, if it be necessary, to cover it with tarpaulins to protect it from the weather. But that such or any other care given to produce or merchandise, where it cannot be counted or regularly delivered, shall not prejudice the consignee's claim against the boat for any packages that may be short, or any damages that may afterwards be found justly chargeable to the boat.

4. It shall be the duty of consignees, to remove from boats each lot of produce or merchandise, as designated in bills of lading, as it is completed; if put out and notice given according to law.

5. If a sale of produce or merchandise be made, such as pork, beef, flour &c., that it shall be the duty of the seller to count to the buyer or his agent, which count shall be considered as delivery, unless delivered according to the following resolution:

6. If the seller give the purchaser an order to the boat for an article sold, it shall be the duty of the buyer, within an hour after purchase, to present the order to the captain or other officer for acceptance, or assent to its correctness. If the officer of the boat accepts or assents to the order as being right, then the purchaser looks to the boat for the produce or merchandise, as specified in the order, Should the officer of the boat not accept nor assent to the correctness of the order, information shall be given to the seller immediately.

7. When the sale of any particular kinds of produce or merchandise is made, that has to be weighed, the seller shall inform the purchaser whether or not it be weighed and ready for delivery. If it be thus ready, the purchaser or his agent, shall accompany the seller to count the same for a delivery, unless the buyer will consent to be governed by the weigher's certificate.

If the produce or merchandise be not weighed and ready for delivery, the seller shall proceed, so soon as the weigher can be had, if the weather be suitable to weigh the same, first giving notice to the purchaser; and the produce or merchandise weighed, shall be considered delivered *as it is weighed*, and at the risk of the purchaser, unless he

shall prefer to receive it in a complete lot; in which case, the articles sold shall be considered delivered, so soon as the last package or article is weighed; provided the weigher completes the lot an hour before sunset, and puts it in a suitable condition for protection against the weather.

8. It is recommended to all, that a spirit of forbearance and concession be cultivated in view of the narrowness and difficulties of our levee; and that all who have anything to do with produce or merchandise, either as boatsmen, consignee, or purchaser, be requested, so far as they can, to protect said articles from damage and loss, for the general good of all interested.

E. F. PITTMAN,
N. RANNEY,
W. H. HEISKELL,
DAVID TATUM,
R. M. FUNKHOUSER } Committee.
DENNIS MARKS,
GEO. DEBAUN, JR.,
J. J. ROE.
GEORGE PARTRIDGE, Chairman.

GEO. DEBAUN, Sec'y.

AN ACT respecting steamboats.

Be it enacted by the General Assembly of the State of Missouri, as follows:

§ 1. If the captain or other officer of a steamboat or other vessel shall, in suitable weather, deposit any freight in proper manner and in good condition, on the wharf of any city or incorporated town, and shall give verbal or written notice to the consignee thereof, one hour before sun down of the day on which the same is deposited on the wharf, such depositing and notice shall constitute a delivery. If the consignee shall expressly refuse to receive such freight, the captain or officer shall cause the same to be stored at the risk and expense of the owner or consignee; and if the consignee do not expresssly refuse to receive the same, but shall fail to take the same away, in such case the captain or officer of such boat or vessel shall be at liberty either to cause such freight to be stored as aforesaid, or to leave the same on the wharf at the risk of the consigneee or owner.

§ 2. When what is among steamboatmen called *dunnage*, may be necessary to preserve any freight from injury or loss, the captain or officer of the boat or vessel shall be entitled to receive a compensation for the actual cost of such dunnage, from the consignee or owner.

Approved March 12, 1849.

LITERARY DEPARTMENT.

For the Western Journal.

WHICH WAS THE WISEST COURSE?

BY MRS. MARY R. HALL.

It was a bright autumnal evening—the husbandman had gathered in the fruits of the earth; his barns and his storehouses were filled: nature had yielded up the richest of her gifts, for the benefit of both man and beast. Seated in a warm and comfortable apartment, was a man in middle life; upon whose brow were indellibly stamped the deep furrows of unremitting toil and care. His eye was restless, and his whole face bore indications of the deepest solicitude.

After remaining silent for some time, he arose, and stirring the bright coal fire that glowed in the grate; he proceeded to examine every window, that he might be assured that each shutter was tightly closed; then locking the door, he opened a desk, and drew from thence a package, and carefully examined its contents. His eyes glowed with delight—his lips parted, as a strange smile lit up his before contracted features; for piece after piece of shining coin lay on the table before him, and a goodly number of bank notes swelled the sum to thousands; and the man of the world feasted his eyes; for here before him lay the proceeds of all his labor and speculation during the present year, which was now rapidly hastening to its close. His most sanguine hopes had been more than realised, and a feeling of satisfaction stole over his heart—if, indeed, the heart of a sordid man *can* ever glow with that holy feeling! Be this as it may, he *believed* himself in possession of this enjoyment, even though it might prove momentary. Mr. Scrapewell, whom we have introduced to our readers, was a worldly man in the *strictest* sense of the term. Gold was his idol—wealth was his god, to which he delighted to do homage. He had married rather early in life, and by the united, untiring efforts of himself and wife, had succeeded in scraping together so much of this world's goods, as to entitle him to the apellation of *a rich man.* By occupation, he was a farmer, but he had accumulated much of his wealth by successful speculation. He had but two children—both sons; the eldest of whom would be of age the ensuing spring; when his father determined to set him up in business for himself, with a capital of several thousands of dollars.

Mr. Scrapewell, though a very shrewd man, was very illiterate withal; he could read and write and manage to keep his accounts: farther than this, his *book knowledge* did not extend. As he had managed to get along in the world with this limited education, he argued that this much would be sufficient for his sons; and upon this principle he had determined to act. Accordingly, William, who was in most respects the counterpart of his worthy father, had been suffered to grow up to manhood without receiving any addition to the stock of knowledge which his parent possessed. From boyhood up, he had

been taught that *time* was *money*, and that *money* was *absolutely necessary to make a man;* that *wealth* was *all* that was required as a passport to honor and true greatness. And so the lad toiled on day after day, that he might accumulate enough to make him a *man*, aye, a *gentleman*—thus the great end of life would be secured! But quite the reverse was Harry, the younger son. He had much rather have a book, than a lump of gold in his hand; he would go without a meal at any time, if he could but be permitted to pore over some stray, tattered leaf which he had found; while the family were enjoying their repast. They all called him a fool, and many a harsh word and cruel blow did the poor boy receive because his assigned task had been hastily gone over, or almost wholly neglected, while he had sauntered far away into some lone wood; where seated on some old moss-covered rock, he was devouring the contents of a borrowed book.

He was a lover of nature, and took great delight in gazing upon the wildest of her beauties. Even the dashing streamlet had music in its gushing waters, and the wild bird's lay sent a thrill of joy into his spell-bound soul, while the bright gems of night, as they glittered in a cloudless sky, he fancied to be angels' eyes looking down upon him from their abodes of bliss. Such a spirit could not be chained down by the iron fetters of avarice, and panting, it struggled to be free.

But a short distance from Mr. Scrapewell's, there lived a man by the name of Wisely. Mr. Wisely was an industrious farmer of limited means, who, never having had the advantages of education, determined to supply the defect in himself, by giving to his children, that of which he had been denied. He was willing to toil early and late; making use of the most rigid economy in all his arrangements, that he might have means to educate his children. It was a favorite motto of his "*No one can rob my children of the wealth which I put into their heads; whereas, if I only place it in their hands, it will be no hard matter to wrest it from them.*" Harry Scrapewell found kindred spirits beneath the roof of neighbor Wisely, for Fred had been his most intimate companion from childhood up. Fred Wisely was a noble youth, upon whose high intellectual brow, true greatness sat enthroned. No one could gaze into the depths of his clear dark eye, and read the language written there, without involuntarily tracing out for him a future path of usefulness and honor. It was with deep regret that he saw the obstacles which were thrown in the way of his friend, to prevent him from obtaining that knowledge for which he sighed. He determined to render him all the assistance in his power, and accordingly devoted every evening, when Harry could leave home, to his instruction; besides, he supplied him with various books, which the greedy boy devoured by stealth. Mr. and Mrs. Wisely approved of their son's course, in striving to assist one who was so anxious to learn: while Jessie, the sweet gentle Jessie, was never so happy as when harry came to spend his evenings under their roof. Fred Wisely was now eighteen years of age, and was, the following spring, to enter upon a course of studies, preparatory to his entrance into college. Harry's heart sank within him at this information, for he felt that he must soon be deprived of his greatest earthly enjoyment. Jessie saw the struggle that was going on in his mind, and strove to comfort him in her own artless way, by telling him she would be his

teacher if he would come as usual to learn. Harry looked his gratitude to the child—for she had scarcely numbered fourteen summers—but he could not speak. The duties of the present evening were closed in the usual way, by a season of devotion, after which, Harry started for home with a heavy heart.

It was upon this same evening, when we first introduced Mr. Scrapewell to our readers, just as he had deposited his shining treasure, that a step arrested his attention; an effort to open the door followed, which was received by a slight rap. "What's wanting—who's there?" thundered out the man of money: for every noise startled him and filled his whole soul with consternation! "Will you let me in father?" responded a subdued voice; and the agitated man threw down a pistol, and nervously unlocked the door to admit his son. "Where on earth have you been Harry, and why out at this late hour? you will ruin yourself and bring disgrace upon your family by the course which you are pursuing—out almost every night till eleven o'clock—can't be in very good company I know, and I must put a stop to it. Here you are, now seventeen, and never have been worth a penny to me all your days; you would be idle from morning till night, if you were not driven to your work—don't seem to be contented without a book, or some ragged leaf in your hand; just as if *books* would make a man! I am out of all patience with you; I am afraid you never will be anything but a dunce, after all I have done to make somebody of you. How can you expect to have an equal share with William; when he has labored hard to add to my means, while you have never earned your living? But now, answer my question, where have you been all this long evening?" "I have only been to Mr. Wisely's father; I hope you don't call *them* bad company." "I don't consider them very *good* company;—Wisely is a fool to spend all the money he gets, in giving his children learning—they would be much better off without it—it only makes them proud and conceited—he can't have much laid by for a rainy day; and there is Fred, he'll have to begin with nothing in the world—*hard rising at that;* and their daughter there, will doubtless marry a beggar, or what is no better; for *who* that *is* anything, will want a wife without some kind of a portion—a small portion is better than none at all."

Harry did not reply, and soon retired, but not to sleep. His noble spirit was wounded. He felt the truth of what his father had asserted, that he had never rendered him any great assistance, as his brother William had done. He felt that he could have willingly toiled to the utmost of his strength, had the object which he so much desired been offered as a reward for his labor. But no such hope urged him on to a performance of his duties—and to toil on for the purpose of heaping up wealth, he felt no heart to do.

Tossing about from side to side, he spent a night of feverish anxiety; and during those long and dreary hours he revolved many plans in his mind for his future course; but discarded them all as fruitless to attempt. When almost despairing, it seemed as if some gentle spirit, some angel of light, whispered words of consolation into his ear, and pointed out to him the path to pursue. The important decision was now made, and he calmly waited for morning to dawn, that he might put it into execution. Immediately after breakfast, Harry

addressed his father thus: "You remarked, sir, last evening, that I was of no benefit to you; and now, father, that being the case, you will not object to giving me my time, that I may make my own fortune in the world. I cannot expect anything from you when I have not deserved it, nor do I *ask* for such a favor; but I do *ask* that the request I have made may be granted."

Mr. Scrapewell was amazed, and fixed his eyes keenly on the face of his son; but the youth quailed not beneath that searching glance: the father read decision in his looks, and he felt that it were vain to remonstrate. At last he broke the silence which had ensued, by saying: "A grand fortune you'll make for yourself, no doubt: a boy that's good for nothing at home, can't be worth much anywhere else. But I've a mind to let you try—we shall not miss your help, that's certain: but what on earth are you going to do for yourself? go to Wiseley's, perhaps, and work for him, and let him spoil you by giving you learning."

Harry replied, by candidly informing him of his future plans, and ended by saying: "I shall doubtless have many dfiiculties to encounter, before I accomplish the object for which I will gladly toil; but be assured that though I fail, I will *never* bring disgrace upon my family."

Mr. Scrapewell gave his consent half in anger and half in surprise, at the determination of his before passive son; and as he did so, he handed him a purse saying, "here, take this to begin upon—it will be bad enough to come out a beggar at last, without being one at the beginning. There are three hundred dollars, and the sooner you get through with them the better; you will then be contented to come home and work for a living, if *I'm* not mistaken; and whenever you come to *that* determination, my house shall yet be your home; but not before;—and dont let any complaints about hardships and privation come back to us, hoping to excite our sympathy,—you have got all I shall ever give for such a purpose: three hundred dollars is quite enough to throw away."

Harry hoped he could return the loan at some future day, and soon after left his father's house, with joy and yet with grief.

He asked advice of Mr. Wisely, which was readily granted, with the promise that he would ever be his friend and counsellor. A few days more and Harry was attending school at A———, a town some sixty miles distant. This place had been selected, as Mr. Wisely was to remove there the ensuing spring to remain, until Fred. had gone through with his collegiate course.

We need not follow Harry through the long years which were spent in climbing up the hill of science. We need not speak of his difficulties; nor the privations which he suffered. What though he had oftentimes to toil with his own hands—what though he had oftentimes to become a teacher, that he might obtain means to supply his accumulating wants; yet on, *on* he sped; while his progress was such as to astonish all who witnessed the race. And here we will leave him to press still onward and *upward* in his shining career, while *Fame* was twining a wreath of evergreens to encircle his brow, and Applause stood beckoning him up to the pinnacle of her glory.

In due time, William Scrapewell was established in the mercantile business; a branch of industry with which he was totally unacquainted, and for which of course he was wholly unprepared, Mr. Scrapewell had selected this occupation for his son, thinking it highly respectable; and he could buy and sell goods and count over money without spending time or fortune in preparing himself for so doing. Alas! that there are so many Mr. Scrapewells at the present day!

William married a dashing young belle, who was an heiress of course; and together they commenced a life of splendor. His industry seemed now to entirely forsake him—he felt that he was rich enough, he had been a slave all his days and would be so no longer He had no taste for the business in which he was engaged, consequently every thing that concerned it was neglected.

I need not follow him through the wild course which he ran, for his history is similar to that of thousands of others.

But a few years had passed away ere his wealth was scattered to the four winds; dissipation marked his footsteps, and on he madl, rushed down the precipice of sin and pollution, till his loathsome remains filled a drunkard's grave. His heart broken wife returned to her father's house to mourn over an ill spent life and disappointed ambition: and sank while yet in the bloom of youth to an early grave; This was a severe blow to Mr. Scrapewell, and for a long time it was feared he would not survive the shock. He had divided his wealth with his son, when he first commenced business for himself; and had oftentimes assisted him since that time to keep him, if possible, from bankruptcy. But he had failed in his efforts; and was not only doomed to behold him stripped of all he possessed; to witness the awful strides he was taking in his downward course; but to see him fall, *utterly fall*, unreclaimed, to rise no more!

It had been a long time since Mr. and Mrs. Scrapewell had heard from Harry, and now that their hearts were chastened, they yearned over their neglected and almost forgotten son. But they knew not his place of residence even if he were alive; which they almost doubted, and it was then with much satisfaction that they heard of Mr. Wisely's expected return to his old homestead; for they presumed he could give them information respecting him. Just at this period there was great excitement in the place where Mr. Scrapewell resided, in relation to a case which was pending in court; the result of which was looked forward to with the most intense anxiety by hundreds of citizens both far and near. It had been carried on from court to court until public spirit rose to such a degree as seemed to demand a speedy termination.

The day for the trial had arrived, and at an early hour the spacious court-house was filled to overflowing, with attentive listeners, eager to catch every word that should be uttered. The minds of that great multitude were swayed to and fro, as each side of the case was discussed with commanding eloquence and power! This mass of mind ran together as the mind of one man in favor of him who had just taken his seat, amid murmurs of applause; for though the majority felt that the decision must be contrary to what they had hoped; still they believed no one present had power to crush that speaker at a blow and render futile his every hope of success! Yet one more arose to speak although it was deemed entirely useless. Silence reigned through that vast crowd; not a breath was heard to disturb the awful stillness of the scene! The young lawyer commenced in a voice rich and deep, which strengthened as he proceeded, until it fell like thunder tones upon the ears of his enraptured listeners. The fire of eloquence lit up his eyes—beamed upon his face—burned upon his tongue as he carried captive that vast throng! He took his seat amid deafening shouts of applause, and suffice it to say, the case was decided in his favor. As the crowd was dispersing, Mr. Scrapewell was seen urging his way on towards a gentleman, who stood but a little distance from him. Upon reaching him he extended his hand, saying: "I am truly glad Mr. Wisely, to we come you back again; did not know till this moment that you had arrived,—your family are all here I suppose." "All here; yes sir, and all well—walk along with me if you please; and call to see them while on your way home." "Thank you; I will do so, but pray tell me what young man that was who last addressed the court—he is a powerful speaker; and I could not keep my eyes from him long before he arose to speak, it seemed as if his countenance was familiar, and yet I cannot imagine who he can be." "That sir is my son-in-law, the husband of my sweet Jessie; *you* recollect *Jessie*; his name is Harry Scrapewell—you may perhaps have some *faint* remembrance of him also." and Mr. Wisely gazed intently into the face of his companion to see what effect his words had produced. That face was deadly pale, and not a word could escape the lips of the trembling man. Mr. Wisely witnessed his emotions, and drawing his arm within his own, they moved on in silence till they reached Mr. Wisely's dwelling. And here we would close the scene by letting the curtain fall; for we cannot describe the meeting of Mr. Scrapewell and his illustrious son, what tears were shed—what forgiveness was craved and granted, and what sorrows mingled with their cup of thanksgiving and joy. All this we will leave to the reader's own imagination, trusting they can do it better justice than we can with our feeble pen! It remains for us to say that Harry was again restored to the bosom of his family as its most honored member; and that he far outstripped the most sanguine hopes that his friends cherished concerning him. We may also add that Fred. Wisely became an eminent teacher in *divine things*. It was his delight to be about his Master's business—he toiled unceasingly for the salvation of souls and reaped a golden harvest of reward. Our simple story has been simply told, and a few reflections at its close may not be amiss.

There are awful responsibilities resting upon those, to whom are committed the training of immortal minds; and yet it is astonishing that so few, comparatively speaking, *feel* this to be the case! Many will nod and assent, when called upon, to look at the subject in its true light; but simply *assenting*, and *acting*, are two very different things.

Better, *far better*, to elevate and ennoble the immortal mind—to supply it with the food it craves—to expand all its energies—to dig deep into its unfathomable mines, and search out all its hidden resources:—better, *far* better *this;* than all the glittering trappings of wealth—the possession of flocks and herds, houses and lands—yea, and much silver and gold! Wealth, when looked upon in its proper light, is a blessing to mankind; but when it debases the mind—when it pollutes the soul with avarice, and coils itself around the heartstrings till every pulse thrills with trembling delight; then, *then*, it becomes a curse, and *woe* unto him who is its possessor!

HARRISBURG, Van Buren Co., Iowa, April, 1850.

Saint Louis Furniture Store,

WM. M. HARLOW, proprietor. Manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, willow ware, &c., &c.

Also, manufactures to order every article in his line, with despatch. Orders from abroad promptly attended to, and goods carefully packed. All goods warranted, as recommended

New Warehouse, No. 88 Second street, between Olive and Locust streets, St. Louis, Mo.

Clothing at Wholesale.

ARCHIBALD YOUNG & CO., 99 Main street, St. Louis, Mo. Wanzer Minor & Co , 126 Pearl street, New York, Moses Wanzer and Henry J. Minor, New York, Archibald Young, St. Louis.

N B.—We manufacture all of our own goods, and sell at the lowest possible prices.

ROLLIN CLARK, } JOHN RENFREW, } { PHILANDER BRALEY, { ALEXANDER CROSIER.

Eagle Foundry and Engine Shop.

NORTH west corner of Main and Biddle streets. Manufacturers of all kinds of machinery, boilers and sheet iron work, portable circular saw mills always on hand, all orders executed with fidelity and despatch.

A splendid fortune may be gained by an outlay of £10 or £5.

Metropolitan Portrait Club.

Offices—88, Albany road, London, England.

THE Directors beg to announce that there will be drawn for a grand series of portraits of all horses entered for the forthcoming Great Derby Race.

The drawing will be conducted upon those honorable principles which have hitherto given so great satisfaction, and secured to the above aossociation such extenstve patronage; and that while the past success and high estimation in which the club is held are subjects of pleasing congratulation to the projectors, they encourage endeavors for a still further development of their plan. For the future, therefore, the number of prizes will be extended to the portraits of all horses that are entered for each particular race —Non-starters as well as winners and starters. The following list is now open :

5,000 members to each class. First class £10, second do. £5, third do £1.

Parties can have one or more shares in each or either of the different classes.

Those members who draw the portraits of first, second, and third horses, the other starting horses, also those that do not start (but which are entered for the race), will receive the following prizes. The drawing will take place ten days before the races.

	Portrait of first horse.	Do. Second do.	Do. Third do.	Divi'ed am'gst the portraits of Starters.	Do. Do. non starters
First class	£20,000	£10,000	£5,000	£5,000	£10 000
Second do.	10,000	5,000	2,500	2,500	5,000
Third do.	2,000	1,000	500	500	1,000

The number of prizes to be distributed in each class are 209, that being the number of horses entered for the race. All letters to contain a remittance drafts, bank-notes, &c., addressed and made payable to the managing director.

JOHN BURRIDGE, Esq , 88, Albany Road, London, England.

Numbers forwarded immediately on receipt of a remittance. Full particulars of the race will be sent with the fortunate numbers to each subscriber, so that he may know his position and whether or not he be one of the fortunate. Office commission 7 1-2 per cent., to be deducted from the above prizes.

N. B.—Lists open for the St. Leger same as the above.

HUDSON E. BRIDGE. HARRISON P. BRIDGE.

BRIDGE & BROTHER,

No. 158 Main Street, St. Louis, Mo.,

MANUFACTURERS of Pierce's Patent "American Air-Tight," "Empire" and "Victory" Premium Cooking Stoves, and every variety of Wood and Coal heating Stoves, dealers in Tin Plate, Copper, Sheet Iron, Iron Wire, Tinners' Tools, Machines, also, manufacturers of Jewett's Improved Patent Cary Ploughs.

J. BEATTIE,

MATHEMATICAL and Surgical Instrument maker, Dealer in Guns, Pistols and Sporting Materials, No 58 North Second Street, between Pine and Olive, St. Louis, Mo., Manufactures and has always on hand; Surveyors Compasses and Chains, Levelling Instruments, Theodolite Pocket Compasses, Spy-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Microscopes and Magnifying Glasses, Hydrometers of silver and glass, Hydrometers for acids and salts, Magic Lanthorns, Electrical Machines, &c., also-- Surgical and Dental Instruments; Pocket, Dissecting, Cupping and Self-injecting Cases; Taylor's Shears, all sizes, Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; Large Scales and Weights, for Druggists; Prescription Scales on Stands; Revolvers, Guns, Pistols, Powder Flasks, Game Bags, &c., ☞All the above Instruments repaired at short notice in the best manner.

CHARLES T. WILGUS. JOHN S. WATSON.

WILGUS & WATSON,

HOUSE, Sign, Steamboat & Ornamental Painters, Glazers, Paper Hangers, Whiteners and Wall Colorers, No. 52 and 54 Pine Street, Saint Louis. Also, Dealers in American and French Paper Hangings, in great variety and of superior quality; White Lead, Oil, Turpentine, Varnishes, Window Glass, Putty, and every variety of Paints, wholesale and retail.

WILSON & BROTHERS,

WHOLESALE DEALERS IN HARDWARE, corner of Main and Olive streets, St. Louis, Mo.

C. BENEDICT, Danbury, Conn. D. PEARCE, St. Louis, Mo.

DAVID PEARCE, & CO.,

MANUFACTURERS and wholesale dealers in Hats, Caps and Straw Goods, No. 120 Main street, St. Louis, Mo.

HEWITT & STEINACKER,

SADDLE, Harness and Trunk Manufacturers, wholesale and retail, No. 67 Fourth street, corner of Pine, opposite the Planters House, St. Louis, Mo.

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M. B. COX & CO.,

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THE

WESTERN JOURNAL.

VOL. IV. JUNE, 1850. NO. III.

ART. I.—LAW OF INTEREST—LIMITED PARTNERSHIPS —HOMESTEAD EXEMPTIONS—EDUCATION, ETC.

Legislation is the exercise of the highest human power that pertains to a government established upon republican principles: and emanating, as this power does, from the great body of the constituents, it becomes the duty of every individual to make himself acquainted with the institutions and laws under which he lives; to guard them against unwise or unjust innovations; and suggest such alterations as the ever-changing condition of human affairs may, from time to time, require.

If the constituent neglects to inform himself in regard to matters touching the public interest, or, being informed, withholds his opinions, he will have no right to complain of unwise legislation; for, by neglecting to perform the duties incumbent on him as a citizen, he tacitly consents to be governed by the judgment and acts of others. Impressed with the importance of these truths, we shall proceed to discharge what we esteem *our* duty, by suggesting a few subjects, which we deem worthy of the consideration of the people and Legislature of Missouri.

The principles involved in social combinations and social action, which have effected such great results in other States of the Union, have neither been adopted into the economy of our people, nor given direction to the policy of the State: and until we shall have introduced these principles into our private and public economy, we shall make but little progress in developing the vast natural resources of the country; nor, in elevating the intellectual and moral character of its inhabitants.

The first subject that claims the attention of the legislature of a republican government, is, a system of education calculated to insure to every individual, reared in the State, a sufficient amount of instruction to enable them to read for themselves, the constitution and laws by which they are governed. This much, at least, is necessary to secure the permanency of

republican institutions: and that State or nation which falls below this point, has not yet established a just claim to be classed with civilized communities.

The subject of education having been discussed at large, in the first and second volumes of the *Western Journal*, we shall not enter, at present, into an argument, to prove its importance, nor offer any plan for the adoption of the legislature. We have suggested it, however, with a hope that it will be introduced into the canvass now going on, for the next General Assembly.*

THE RATE OF INTEREST.

This is a subject that has been more generally discussed, perhaps, than any other within the whole range of political economy. It would be a waste of labor to review the history of usury, or interest taken for the use of money, from the time of Moses, to the present day: nor, need we refer to the laws of other countries to enlighten us in respect to our own policy.

We define money to be an agent of exchange: the value of its services depends upon innumerable contingencies; and there is no other commodity so unstable and fluctuating in price. Indeed, this variableness is one of its inherent qualities; and could it be deprived of this, by legal enactments, it would lose, in a great degree, if not entirely, its usefulness as an agent of exchange. Were the legislature to declare that corn or any other commodity should, at all times and places, within the State, be sold at, or below, a certain price in money, and were it practicable to enforce the observance of such a law, what would be the condition of the people in case there should be a scarcity of the commodities whose prices were thus limited? When their exchangeable value had advanced above the legal rate, they could no longer be purchased with money; people from other States would not bring in supplies; and our citizens would be driven to the primitive method of bartering; or, each must send his money to other countries to purchase the quantity needed for his own consumption. Similar effects are produced by laws limiting the rate of interest; for, when a scarcity of money occurs, and its value to the holder is greater than the legal rate of interest, he no longer hires it out, but seeks to invest it in property at depreciated prices; or, it may be, he resorts to some indirect method to evade the law, and charges an exorbitant price for the risk

*We may be permitted to remark, that, in addition to our own labors, connected with the subject of education, several valuable articles from more able pens, will be found in the preceding volumes of our Journal, which contain a review of the various systems of public, or common school education, that have been adopted in different countries; besides much statistical information. To all of which we invite our readers in Missouri to refer.

incurred. It is most evident that such limitations detract nothing from the power of the money holder in times of great scarcity; for, if he is denied the privilege of lending money at a high price, he is protected against competition in the purchase of property at prices below its average value. When left free from legal restraints, money, continually, tends in the direction of the best market; and, if an extraordinary demand occurs in any particular part of the world, where high profits can be realised, competition soon reduces its value to a standard corresponding with the productions and pursuits of the community; and thus, the local necessities are relieved by an influx of money from other countries. But, limit the rate of interest to a point which is esteemed to be the average value of money, and then when a scarcity occurs, there is no inducement for the capitalists of other States to send their money to the market where it is most needed; unless it may be for the purpose of buying up real estate, and other property, on speculation.

We regard all laws limiting the rate of interest, as restraints upon commerce, and in conflict with the natural laws governing the use of money; and, however plausible the arguments in favor of such limitations, they are, at best, but expedients, designed to prevent evils from coming in at one door, while they open another and invite them to enter. We do not hesitate to declare that, in our opinion, the present law of Missouri, limiting the rate of interest at six per cent. per annum, is unwise; detrimental to the prosperity of the State; demoralising in its effects; and destitute of a single redeeming quality. The daily transactions of the community attest the truth of these assertions. While there may be a few conscientious and cautious individuals who respect the law, it is a fact well known, that the average price for the use of money is far above the legal rate of interest; and, perhaps, quite as high as it was before the old law was repealed.

A law that can be evaded by so many contrivances, affords to the grinding money lender and daring speculator, an unjust advantage over the more prudent and law-abiding part of the community—an advantage which should never be tolerated by a just government.

Notwithstanding the principles for which we contend are generally admitted to be sound, yet, the prejudices which a lage portion of mankind entertain against usury, mislead their judgments; and, in their zeal to protect the unwary and needy against the power and practices of the money lender, they impose restraints upon the most essential and efficient agent of commerce, which are calculated to affect injuriously the prosperity of the entire community.

We will not affirm, that, in the present state of society, all restraints against usury should be removed : it may be prudent to fix a rate, above which, interest shall not be charged and collected by law : the principal evils of the present law would be removed by establishing the rate of interest sufficiently high to invite competition, and authorise money to flow into our market in times of scarcity : and this, we contend, is the only reasonable and the most certain mode of reducing the rate of interest, and of counteracting the power of the money lender.

LIMITED PARTNERSHIPS.

As another inducement to capitalists to employ their money in Missouri, we suggest the enactment of a law authorising limited partnerships. Were such a law in operation, many individuals residing in other States, and, perhaps, in Europe, would embark a limited portion of their money in commercial or manufacturing operations in this State, who would be unwilling to hazard their entire fortunes in business carried on so far from their homes.

It would afford to individuals possessing surplus means, an opportunity of establishing their relations, or other worthy and enterprising persons, in business, upon a footing that would be quite as safe to the community at large as the present system of general partnership ; for, the amount and extent of the liability of the absent partner being made public, by spreading his agreement upon the records of the county, and, in such other manner as the legislature may prescribe, the community would be as capable of judging of the extent to which the firm could be safely trusted, as it would be in cases where no such limitation existed. Several of the States have passed laws authorising limited partnerships ; and we have never heard of any evil consequences that have grown out of their practical operations.

It is not probable that many of our own citizens would avail themselves of the provisions of such a law ; but, there can be little doubt that it would be the means of inviting more or less capital from other States ; and this we regard as a strong inducement, at present, for its adoption.

HOMESTEAD EXEMPTIONS.

The policy of exempting a small tract of land from sale by execution has been growing into favor for some years past, and, has been adopted, we believe, by about one-half of the States of the Union. This measure commends itself not less to the statesman than to the philanthropist ; and, indeed, it may be regarded as essential to the perpetuation of republican

institutions. Without a homestead, and destitute of the means to purchase one, few individuals could afford to educate their children, even at the public charge; and, where shall the parent repose, when decrepit by age and worn out by a life of toil? The tenant of a hired hovel, a burthen upon his offspring, or, it may be the inmate of an alms house, his soul embittered by the remembrance of the struggles and misfortunes of a wretched life, he must be a christian indeed if he can depart in peace with a race from whom he has received so little sympathy. But, if in despite of his hard lot he should still continue to cherish the sentiment and sympathies of a patriot, yet, his life of privation will have imbued the minds of his offspring with bitterness; blighted their sympathies for their fellow men; poisoned their social nature; and, whether they live in poverty or rise to the possession of wealth, selfishness and disregard for the happiness of others, will be the distinguishing traits of their character: and most surely will they requite the evils inflicted upon their ancestor.

It is infinitely more important to society that its members should be protected in the possession of the means of obtaining a comfortable subsistence, and, of improving their mental and moral condition than that they should enjoy the privilege of expelling the unfortunate from his homestead, and forcing him and his family to seek shelter and employment upon such terms as others may dictate. The power to bring about such results should not be tolerated in a country boasting of the freedom of its institutions. We are aware that the proposition is startling, at the first view, and until men have given to it some degree of reflection they are apt to conclude that such a law would encourage the perpetration of fraudulent transactions; but we are fully persuaded that such would not be its tendency. The apprehension of being deprived of all the means of subsistence, and, the necessity of retaining something to sustain the unfortunate individual and his family, at least for a time, are temptations which no ordinary mind can resist; and in our opinion occasion more fraudulent devices than spring from all other causes combined.

No injustice would be done to him who becomes a creditor after the passage of the law; for, knowing that the homestead is placed beyond the reach of an execution his contract would not be based upon the faith of making it liable for his claim; and, as none are compelled to give credit, it would be the folly of one if he trusted another beyond his means of paying. But we are persuaded that debts against men of small means would, in general, be paid with more punctuality, and fewer losses sustained by creditors, than under the old law. The importance, and even necessity, in many circumstances, of obtaining credit, is felt and appreciated by every intelligent

individual; and when a considerable portion of ones property is exempt from sale by execution he will feel more sensibly the force of the adage that "honesty is the best policy."

A reputation for integrity and punctuality in his dealings will constitute a capital upon which he must rely in time of need; and he would be blind and perverse indeed, if he did not labor to establish such a reputation by a strict, and uniform compliance with all his contracts and obligations. Man rarely sinks so low in the moral scale as to become totally insensible to the confidence and trust reposed in him by his fellow man: the profligate and dishonest gambler pays a debt of honor, and even pirates and banditti have been known to hold faith with, and protect those who have trusted to their humanity. The legislator should study this interesting, and we may say, redeeming principle of man's nature: and in the exercise of his legislative functions should continually aim to call forth its development. We believe that this measure would tend to elevate the moral standard of a class of individuals whose welfare has been too little regarded under every form of government, in all countries. It has been the tendency of all laws regulating property to protect the possessor rather than to assist the destitute in obtaining it; and to degrade those, who, by reason of their follies, misfortunes, or want of foresight, are compelled to yield their possessions to others. The protection of the law follows the property—this is just; but it leaves the individual who has lost it to take care of himself. True, he may rise again, if he can, but, if he become a beggar, and his offspring shut out from the places of learning, grow up in ignorance and, exposed to the companionship of vice, become pests to society, the law proposes no remedy but punishment—sinking him still lower in the social scale, to a deep so profound and hopeless that his condition must remain irretrievable forever. Thus, vice and pauperism increase as communities advance in age, until, finally they destroy the institutions which engendered them; and few cases have occurred, where, in reconstructing the social fabric, the new institutions have been better than the old.

How can this vicious tendency of the laws be prevented? This is the great problem of the age; and more than any other, challenges the consideration of the American statesman. It would be absurd to imagine that a complete remedy for this evil could be found in any one measure: but we are persuaded that a law exempting the homestead of every family from sale by execution would be the means of raising many of the poorer classes to a state of comparative independence, while it would break the fall, and save from degradation very many of the rich, whose misfortunes would otherwise consign them to a state of absolute and irretrievable poverty.

It may not be generally known, that by a law of Missouri, the debtor has now the right of reserving from sale by execution, real estate to the value of one hundred and fifty dollars; but he can only avail himself of this privilege by surrendering a portion of the personal property exempt by law. To obtain this boon, he must surrender all his working animals, cows, hogs and sheep; and even his plough, axe and hoe. It is difficult to conceive how one could retain his homestead under the provisions of this law, especially, if all the claims against him were not satisfied; for by taking the real estate, he surrenders the means that are absolutely necessary to render it of any value to him; and could he procure these necessary articles on credit, they would still be subject to sale by execution. Besides, the amount in value is insufficient to secure the ends proposed. The reservation should be sufficient to enable a family, by reasonable industry and economy, to support itself, and obtain an education corresponding with their condition and pursuits.

We have heard objections to this measure, on the ground that if men should be protected in the possession of their homesteads, they would relax their habits of industry, and, relying upon the certainty of support, derived from a little labor, would be in danger of declining into a state of ignorance and vice. Those who insist upon this objection, have not studied the spirit of the age, nor, do they comprehend the genius of the American people: the civilized world is actuated by the spirit of acquisition, the rich and poor are alike under its influence; the man of repose finds no companionship, and is compelled to press onward or be left in solitude. This is more especially the case in the United States; and no man who bears an American heart, impressed with a sense of the lofty destiny of his country, will be idle if he can find employment, no matter what may be his condition. One of the objects of this measure is, to secure employment to all who may once obtain possession of a homestead; to prevent him from being thrown back into the ranks of the dependent hireling, where increase of competition leads to beggary and degradation. Another object is to secure every family the means of acquiring an education sufficient to enable them to understand and appreciate the institutions of the country, and to enjoy the blessings of a cultivated intellect. The attainment of these objects will, the more firmly, establish the principles of our free institutions, in the hearts of the people; for, the individual who has no interest in the soil, especially if he be dependent and ignorant, can feel but little attachment to the country in which he lives; no change that can happen will make his condition worse, and it is ever easy to persuade him that the chances of a revolution are in his favor. It is the duty of the statesman to guard against

the increase of a class which, owing to its condition, esteems the institutions unjust that protect others in the possession of wealth. In the present condition of society there is something more required at the hands of the legislator than the enactment of laws to restrain men from vice and to protect them in the enjoyment of their property: the social arm should be extended to sustain and encourage the weak and the unfortunate, while none should be permitted to fall so low as to become a burthen or a pest to society. The prison and the alms house are the monuments of an age but little removed from barbarism : to the honor of the present generation the locks and bars of the debtors' apartments in the former have been removed; and we verily believe that by a wise course of policy the latter may, in time, be dispensed with perhaps entirely. The unfortunate debtor has been released from prison; let us proceed a step farther, and save him from pauperism; not by a division of property, nor by charitable contributions to repair his losses, but by simply denying him the right of binding himself by a contract that can deprive him of his homestead.

ART. II.—SECOND FORM OR PHASE OF THE SPANISH PARTY IN KENTUCKY.

[Continued from May Number.]

This party in Kentucky, which took its name not from the adoption of Spanish views and interests by any party in Kentucky, for such was never the fact; but from the employment of Spanish officers, to seduce the people of Kentucky from the Union, took another form in 1795, which may be distinguished as its second shape or phase.

At this time, the navigation of the Mississippi was still an unsettled question between the governments of the United States and Spain. Even the boundary of the United States, stipulated by the treaty of Paris, in 1783, was resisted by the latter. She claimed, and actually exercised, jurisdiction on the Mississippi, up to Vicksburg—then called the Walnut Hills; maintained forts at the latter point and at Natchez. Our relations with Spain, fluctuated with all the changes of relation between her and other European powers, and particularly France.

In June, 1795, Thomas Pinckney was sent to Madrid, to bring these negociations, so long pending, to a close. In the mean time, possibly under instructions from Spain, issued before the arrival of Pinckney, Carondelet, governor of Louisiana, dispatched Thomas Power from New Orleans to Louisville, in Kentucky, with a letter addressed to Benjamin Sebas-

tian, then a judge of the court of appeals of that State. In this communication, which is spread on the legislative records of Kentucky, he declares "that the confidence reposed in you by my predecessor, Brigadier General Miro, and your *former* correspondence, have induced me to make a communication to you, highly interesting to the country in which you live, and to Louisiana." He then mentions "that the King of Spain was willing to open the navigation of the Mississippi to to the western country, and desirous to establish certain regulations reciprocally beneficial to the commerce of both countries." To effect these objects, Judge Sebastian was, the Governor says, "to procure agents to be chosen and fully empowered by the people of your country, to negociate with Col. Gayoso, (afterwards governor of Natchez,) on the subject, at New Madrid * * * * whom I shall send there in October next, properly authorised for the purpose, with directions to continue at the place or its vicinity, until the arrival of your agents."

Some time in November, or early in December of this year, 1795) Judge Innes and William Murray, a distinguished lawyer, afterwards of Natchez, were requested by Judge Sebastian to meet him at the house of Col. Nicholas (the father of the present Louisville Chancellor). The gentlemen went to Col. Nicholas', as they were desired, and there met Judge Sebastian. Some deliberation ensued, which resulted in the unanimous opinion of the gentlemen assembled, that Judge Sebastian should meet Col. Gayoso, to ascertain the real views of the Spanish Government, in these overtures. Sebastian, accordingly, descended the Ohio, and met the Spanish Agent at the mouth of that river. In consequence of the severity of the weather, however, the gentlemen agreed to go to New Madrid. Here a commercial agreement was partly effected; but some difference of opinion occurring between the negociators, they repaired to New Orleans, to submit the matter to the Governor General, at that city. This adjustment was deferred by some pressing business, when, after a few days, the Spanish Governor sent for Sebastian, and informed him that a courier had arrived from Havana, with the intelligence that a treaty had been signed between the United States and Spain, which put an end to the business between them. The Kentucky envoy, after vainly urging the Spanish Government to close the sub-negociation, in the expectation that the treaty would not be ratified, returned to Kentucky by the Atlantic ports." Thus ended the attempt, in 1795, to form a commercial connection between Kentucky and New Orleans, on the part of the provincial authority of the Governor of Louisiana.

THIRD FORM OR PHASE OF THE SPANISH PARTY IN KENTUCKY.

This private negociation, though terminated so abruptly by Carondelet, contrary to the urgent representations of Sebastian, was again renewed by the former officer in 1797. This was while the territorial line on the south was marking, between the United States and Spain. It was again attempted through the agency of Messrs. Power and Sebastian, on the respective parts of the Governor of Louisiana and certain Kentucky gentlemen. Thomas Power again arrived at Louisville, Kentucky, in the spring of 1797, as the agent of the Governor of Louisiana, and ostensibly on a mission to General Wilkinson, who then had his head quarters at Detroit.

Power, immediately on his arrival in Louisville, communicated a letter from Governor Carondelet to Sebastian, desiring him to lay it before Messrs. Innes, Nicholas and Murray. In this letter, the proposal was boldly made "to form a government wholly unconnected with that of the Atlantic States." To aid these perfidious purposes, in the face of a treaty just negociated between the two governments, and to compensate those who should consign themselves to infamy by assisting a foreign power to dissolve the sacred league of the States—to convert its free republican institutions, into dependencies on the arbitrary and jealous government of Spain, orders for one or even two hundred thousand dollars, on the royal treasury of New Orleans; or, "if more convenient, these sums were to be conveyed at the expense of his Catholic Majesty into the country" (Kentucky) and held at the disposal of those who should degrade themselves into Spanish conspirators. Other details of arms, &c., were entered into on an occasian not worth repeating.

The compensation to Spain for the free use of money and arms, made in this communication, was to be found in extending the northern boundary of Florida, at least to the Yazoo, to which Spain had tenaciously adhered, and which she now desperately and for the last time, endeavored treacherously to retain. It will be remembered that Great Britain had, while Florida passed under her dominion, by the treaty of Paris, in 1763, extended West Florida north to the Yazoo river, hence the pretension of Spain to the same boundary, when adjusting the territorial limits between herself and the United States.

After receiving this communication from Power, Sebastian visited Judge Innes at his seat near Frankfort, and laid it before him. The Judge, and I quote from his own communication, to a legislative committee, immediately observed that "it was a dangerous project, and ought not to be countenanced, as the western people had now obtained the navigation of the Mississippi, by which all their wishes were gratified.

Sebastian concurred in sentiment, *after*, it must be observed, this explicit declaration of Innes, who seems to have given tone to the whole conversation. Still, as Power desired an answer in writing, Sebastian prevailed on Innes to see Col. Nicholas, saying, "whatever they did he would concur in." A few days afterwards, Nicholas was seen by Innes at Lexington, Kentucky, who agreed, in opinion, with the Judge. The Colonel, accordingly, wrote an answer to Power's communication (dated September 4, 1797—Rep. Journal, 1806.) unequivocally declaring that they "would not be concerned in any attempt to sever the Western country from the United States; that, whatever part they might, at any time, be induced to take in the politics of their country, that her welfare would be their only inducement, that they would never receive any pecuniary or other reward for any personal exertions made by them to promote that welfare." The reply containing these sentiments, was forwarded to Sebastian, and by him communicated to Power. Thus terminated this pertinacious and treacherous intrigue on the part of Spain, to dissever these States. It is due to this subject and its actors, to state how these secrets were disclosed. In the session of 1806, Judge Innes was summoned before a committee of the House of Representatives of Kentucky, which had been instituted to inquire into the conduct of Judge Sebastian. Before this committee, Judge Innes disclosed the whole tissue of the Spanish intrigues, which have been related. Upon this frank and honorable disclosure, preserved in the legislative records of Kentucky, and subsequently communicated by order of the legislature, to the Congress of the United States, this relation has been based. There the whole matter slept the sleep of death, from which, Judge Rowan has often told the writer, he could not awaken it. A committee was appointed but never made a report; high influence, it was said, suffocated the whole matter. We will now advert to the character of the persons involved in this memorable passage of western history. These are all marshalled for judgment and execution by the author of this truculent essay. The first character in order is *John Brown*, who is mercilessly arraigned on the sole testimony of a libellous newspaper, which was published in high party times, some forty years ago. How wanton—how unjust—how contrary to the tribute of the highest public testimonials of his adopted State, and the confidence of Washington, have already been shown. It only remains to add, that the bitterest enemies of John Brown, and they were political ones only, never connected him in the slightest degree with the communications of Power and Sebastian. They were, apparently, as unknown to him, as they were to the whole commonwealth, before the voluntary disclosures of Judge

Innes. These may be compared to a thunderbolt in a summer sky.

Judge Innes.—This gentleman has already occupied no little attention, in this sober review of his conduct: the injustice and misrepresentation of this essay, must be undeniable. They are rather the ravings which could alone be inspired by the passions of party, in the bitterest moods of its existence. They are echoes or quotations, from the polluted columns of the "Western World"—a paper bitterly edited by a Scotch slanderer of John Adams—the notorious John Wood. Who ought to blush at the charge that Innes "persisted in his treasonable conspiracies with every foreign emissary, who intrigued for the dissolution of the Union, regardless alike of the duties of a good citizen, and the high obligations of his official duty"? Certainly, no friend to Judge Innes can be disturbed by such frantic misrepresentations of his course. But first, let us listen to the explanation of his conduct, given by the Judge himself, in his examination before the legislative committee. "The reasons" says Innes, "why himself and Col. Nicholas, did not communicate the subject to the Executive of the United States, were these:—1st. It was known that neither of us approved of Mr. Adams' administration, and we believed he kept a watchful eye over our actions; that the communication must depend upon his opinion of our veracity; and it would have the appearance of courting his favor; 2d. that we both had reason and did believe, that the then administration were disposed, upon the slightest pretexts, to send an army to this State, which we considered would be a grievance upon the people, and therefore, declined making any communication on the subject, as we apprehended no danger from the Spanish Government."—(Journal House of Reps., 1806-7). These reasons, I am willing to admit, will bear no examination; and yet, I have frequently thought what Col. Nicholas would have said on this matter, had he then been alive. How indignantly would he have scorned the base part of a public informer!—a States' evidence!—when all danger to the country had been averted. He would not have stooped to betray Judge Sebastian, to the loss of his character and office, by wanton delation; nor, would he have spared the apparent apathy, if not criminal disregard of the navigation of the Mississippi, which had been evinced by the administration of the old Congress.

Judge Innes must have felt the force of these considerations, though he did not avow them; and, but for his high and conscientious sense of duty, when summoned before the legislative committee, the public might never have been acquainted with these defeated intrigues of Spain. The memory of Innes and Nicholas is free from all suspicion of being tainted with foreign bribery, however, party feeling, in times of high party existence,

may have led them to conceal from their own government, these tamperings of a foreign one. Apprehensions of political consequences to Kentucky, should not for a moment have been allowed to interfere with the duty of both, as citizens, and one as a judicial officer of the United States. The charge of foreign bribery, though brought home to Judge Sebastian, never was attached to his associates in the slightest degree. All participation in this odious business had been rejected, too tamely, I admit, by them; yet, it fastened an obloquy, upon Judge Innes, which, in this instance, he did not fully deserve, and which distressed him through the remainder of his life; if it did not shorten his days. The whole tenor of the conduct of Messrs. Innes and Nicholas cannot justify the slightest suspicion of their fidelity to the Union of the American States, or indifference to their liberties. Their character, for faithful, devoted friends, to the freedom and happiness of their country, had ever stood high and unimpaired in the confidence of their fellow citizens. It is likewise due to the virtues of Judge Innes to declare, that in all the relations of private life, no man was dearer or more idolized, by the witnesses of his mild, upright and benevolent character. His public career in Kentucky, amidst its earliest difficulties, had always been one of high trust and confidence, in all the changes of government: he had early been appointed judge of the Virginia district court, then attorney general, and finally, judge of the United States district court of Kentucky. In all these responsible capacities the conduct of Judge Innes was without reproach, and raised him most deservedly high in the public esteem. He repeatedly received the thanks of Gen. Washington, for his services in the Board of War, which was organised for the Western country in 1792.

Col. Nicholas.—This gentleman has left behind him the reputation of an exalted and patriotic, as well as a most distinguished lawyer. In the Convention of Virginia, assembled to decide upon the ratification of the present Constitution of the United States, he took a prominent and influential part, alongside of such illustrious worthies as Wythe, Madison and Gov. Randolph. He bears the reputation of being the author of the first constitution of Kentucky. To a man of such reputation, and such associations, what could have been more repugnant than a dependence on Spain? or more shocking to all the dearest feelings of his heart, than to become a Spanish conspirator? These men might all have duped the Spanish agents into any disbursements from the King's chest at New Orleans, much more effectually than Sebastian; but their sense of honor most properly disdained it. How cruel and unjust then, now to stigmatise their memory with slanders long ago buried by the public indignation of Kentucky, in silence and contempt!

Judge Sebastian.—For this person I have no apology to make; for his conduct in 1795 & 1797, at once degraded his distinguished abilities—his commanding address—his more courteous and dignified manners--by stooping from high office to become a pensioned agent of a foreign government. He was convicted before a legislative committee of having received a pension of $2,000 per annum from Spain; and that his conduct in doing so "was subversive of every duty he owed to the constituted authorities of our country, and highly derogatory to Kentucky." This report was unanimously agreed to by the House, and the Judge was suffered to resign, in sympathy for an ancient public servant. The charge of public bribery must be confined to Judge Sebastian; to whom the testimony, under the excitement of most embittered party, *exclusively* applied. Not a public statesman in the West, with this exception, and bearing in full mind the calumnies against Gen. Wilkinson, can, with the slightest grounds of justice, be charged with this high public crime. As well attempt to assail the character of Col. Thomas Marshall, the father of the Chief Justice, because he received the visits of Doctor or Col. Connolly, who called upon him for the purpose of ascertaining the temper of Kentucky to accept British assistance. Yet, he disdained and repelled such offers, as truly as Judge Innes and Col. Nicholas had, the offers of Spain in 1795 & 1797. As well assail Major Crittenden, the father of the present noble Governor of Kentucky, because he saved Connolly from being mobbed in Lexington, Kentucky, and permitted him to return to Canada with whole bones. No schemes of disunion never had existence on the soil of Kentucky, but when abandoned by her own government, as she was under the Old Congress.

Judge Muler.—In regard to this honorable and amiable Judge, whom I well knew, I only wish I could find access to the memoir of Judge Todd, furnished for Wheaton or Peter's reports, by his gallant son, Col. Charles S. Todd, the late minister of the United States, to St. Petersburg, for the detail of his vindication. But deprived of these, I am but at little loss to repel this attack, upon the fair fame of the ancient Chief Justice of Kentucky. So far from having any connection with the Spanish conspiracy of Carondelet, Power and Sebastian, the wantonness of party slander never hinted such an accusation, beyond the polluted columns of the "Western World." And will it be believed that an old man, who had gallantly fought his way through the whole revolutionary war, Scotsman as he was, on the side of American liberty, is taunted with monarchical attachments? Yet the gallant and generous hearted old Judge, who left himself a beggar by resigning his chief justiceship, under the pressure of years, disappointed in the pension given to him, on the resignation by the indignant repeal

of the law, under which it was granted, found an asylum in the family of Judge Thomas Todd. There he lived the remnant of his days a pensioner upon his more youthful and fortunate friend. I used to visit him in the log cabin which he inhabited in the Judge's yard, serenely whiling away his time with his books and his violin. And now, when deprived of all the fruits of a long public life, devoted to Virginia and Kentucky, in the field and on the bench, he died leaving Judge Todd, his residuary legatee. Under this will, Judge Todd recovered a large and handsome sum of money, for this *monarchist's* military services to the commonwealth of Virginia. "Oh shame where is thy blush!"

General Wilkinson.—In June 1787, James Wilkinson, afterwards the famous general of that name, descended from Kentucky to New Orleans with a small cargo of tobacco, determined, as he tells us in his own memoirs, (vol. 2, pp. 112, 116), to try his enterprise and address at the seat of the Spanish government of Louisiana. When the boat arrived through the long intervening wilderness, at New Orleans, the representations of a friend of Wilkinson's to Gov. Miro, prevented its confiscation. Mr. Patterson, the friend of Wilkinson, was, moreover, permitted to dispose of the cargo free of duty. (American State Papers, p. 704). In addition to this favor extended from the politic fears of the Spaniards, Wilkinson obtained a contract to furnish a considerable supply of tobacco for the Mexican market annually. This tobacco was to be paid for at ten dollars per cwt., or as Clark says, $9,50 delivered in the King's stores at New Orleans; when it was selling in Kentucky for $2 per cwt.

This contract, which Wilkinson had at the time, the most perfect right to make, as much so, as any private citizen has, at this day, with a foreign government, at peace with the United States, became the source of many malignant insinuations against him, when, as afterwards, he became an officer in the army of the United States. Payments under this contract for tobacco delivered at New Orleans, which were remitted to, and received by Wilkinson in Kentucky, although immediately paid away to the farmers of that State, were all trumpeted abroad as Spanish bribes. I will repeat what sixteen years ago I said, on this subject. "It is due to the memory of General Wilkinson, to his distinguished services and persecutions, to declare that this part (meaning the tobacco contract,) of the subject was approached by the author, with strong prepossessions against his purity. But on sifting the mass of testimony procured by one military tribunal, and four committees of Congress, added to that presented to a second court; and finding the General acquitted by both courts, and their sentences approved (reluctantly approved in the last instance,) by two Presidents

of the United States, the author has been forced into the conclusion, that this military officer has been wronged in the suspicions and denunciations so long and bitterly indulged against his honesty. "General Wilkinson did certainly show no reserve in disclosing to his own government these connexions with the Spanish officers at New Orleans; nor any backwardness in developing the circumstances, or in soliciting enquiry from General Washington, or the elder Adams. "But one conclusive consideration in the mind of the writer, which confirms the honor and fidelity of Wilkinson, is, that, in his long and various public services, no one solitary instance can be justly alledged, in which he disregarded or violated the strictest, and most zealous discharge of his duty." How easy would it have been for Wilkinson, when stationed on the Sabine river and informed by Swartwout that Burr was descending to New Orleans, to have avoided patching up matters with the Spaniards on that frontier, or to have precipitated hostilities, never difficult, between enemies in the field? A negative course would have left New Orleans open to the plunder of Burr; active hostilities with the Spaniards would have been still more effectual. But what was his course? it was to agree with the Spaniards upon the Sabine as a temporary line between the United States and Spain, until farther negociations of the two governments; and to hurry down to the defence of New Orleans, how effectually we all know. Yet this eminent officer seems to have been, with many brilliant qualities, an unfortunate man. An aid to Gates in the battle of Saratoga, second in command and then first, against the Indians on the Wabash, second in command at the battle of the Maumee, in 1794, commander in chief of the army of the United States, commissioner to receive Louisiana from France, Governor of Upper Louisiana, commander in chief against Montreal; still Wilkinson died in suspicion and disgrace—an exile in Mexico. While in Kentucky was there an address to be written which should pour forth her ardent feelings—a debate in her district conventions to be opened on her vital interests,—Wilkinson was equally the author of the one, and the speaker in the other. So varied, rich and polished were the powers and acquirements of this singularly versatile person, that whether in the field of Saratoga, the cabinet of Governor Miro, or in the coventions of the backwoodsman of Kentucky, this gifted man, drew all eyes upon him, and was looked up to, as a leader and a chief. His memoirs furnish one of the most curious exhibitions of the vicissitudes of a public officer which the service of this republic affords. Wilkinson was an ardent speculator in lands and anything else which pleased his ardent imagination—he was no conspirator, either with Burr or with Spain.

I will follow this essay no farther than to say, that the land companies of the country, in the early history of the West, had no more connection with any foreign government than they now have all around us. Land, in our rapidly augmenting country, is as natural a subject of traffic as bread and meat; and it would be quite as well to connect the latter with intrigues of foreign governments as the former.

I can now only say, at the close of this naked vindication of Kentucky statesmen, some of whom were most esteemed friends, and others respected on the traditions and records of the State, that I wish I had time or ability to enlarge upon the real and genuine *early spirit* of the West. It is a noble theme —it is to delineate that spirit which scaled the Alleghenies and spread the dominion of the Republic to the banks of the Mississippi—which vanquished confederacies of the most warlike savages on this Continent, fed and armed by a European power, and in fine, has substituted for the wilderness and savage man, fields ripe with the blessed fruits of the farmer's labors—sacred churches, noble schools and halls of free legislation; and above all, a people of high-spirited intelligent freemen. Is this not a debt which the civilization of the world, owes to the early spirit of the West? This is the high mission of civilization which is now only fulfilling on the Pacific, amid the Placers of California, and the mountain gorges of Oregon—the appointed work which was begun in the stations of Kentucky and Tennessee. Are these not fruits worthier of a critics eye—worthier of a true historian's comment, who is imbued with the generous spirit of our own people, than the offenses or mistakes of a few public men? What morbid taste is this, which prefers to feed on the garbage of stale and rotten slanders of ancient public servants, to feasting on the glorious works of the high and gallant deeds, which have spread a peace-and-labor loving people from the Alleghenies to the Pacific Ocean! What France, and Spain, and Great Britain, in the highest pride and power, have failed to do—the pioneers of the West, embracing the *Puritans* of the North-East, as much as the *Long-Knife*, of Virginia, have greatly, wonderfully done, and are still doing, to the admiration of all true friends of humanity—civilizing and Christianizing America.

ART. III.—PACIFIC RAILWAY—LIEUT. MAURY.

NATIONAL OBSERVATORY,
WASHINGTON, MAY 5, 1850.

To the Editors of the Western Journal:—

I received yesterday a number of the Western Journal for January, February and March last.

I presume I am indebted for them to your kind consideration, for they came without any indorsation to show otherwise.

There is in this country no journal whose pages I turn over with more pleasure and profit, than I do those of the Western Journal. Pray, accept my most hearty thanks for the numbers sent.

I observe that in your March number, you pay your respects to me through my letter to the Members of the Memphis Convention touching the great Pacific Railway.

We both want the road. There is no difference of opinion there. You only differ with me as to the route and the grounds on which the work should be advocated. And in this it is an honest difference of opinion, candidly set forth. Under such circumstances, it is always pleasant and profitable to me to have the views of such men as those whose thoughts embellish the pages of your Journal.

I always think it is best to look facts in the face: and with all deference, it does appear to me that he who expects to see any of the great agricultural staples of the Mississippi valley traveling in a regular business way from one end of this road to the other, in search of a market, either in China or the Islands of the Pacific, is doomed to disappointment. I am not speaking of famine prices; for that is the exception that makes the rule general; but of the regular course of business.

However, as you go so far as to intimate that I do the cause an injury when I place this great work on the footing of a work of national defence, I beg the favor of space enough in your valuable Journal, for a word.—I'll be very brief:—

California is a mining country; and we have every reason to believe that a mining country she will continue to be for a number of years to come. There is reason also for the opinion, that the business of mining will so engross the attention of her inhabitants, as to make them very dependant on other parts of the world for food and raiment, and the chief articles of necessity.

Now to show you how entirely a work of national defence must be this great National Highway, whenever, wherever, and by whomsoever, completed, let us suppose that we should, during the approaching summer, be involved in war with England; and that the Lords Commissioners of the Admiralty should order her Majesty's fleet in the Pacific, to blockade the

harbors of California, our small squadron there has not the strength to drive that fleet away. Well, England establishes a blockade and stops the provision ships from going in. Where would the Californians then get bread and meat? They produce little or none. Thus, in the course of one month, or two at most, the 200,000 people who, we are told, are to be in California this year, are starved without a fight, or the chance of a fight. Contributions to any amount may be levied upon them, and then at last they are reduced by all the horrors of famine to surrender at discretion.

The whole population of California is made up of fighting men for war, and yet never was there a country so helpless and defenceless as she would be if attacked by sea. Until the Railroad is built, that country must remain at the mercy of any naval power that chooses to attack it, for, before relief can get there around Cape Horn, its people could be starved.

If you had the Railroad completed you could send the people there, provisions, arms and munitions of war, and enable them to defend themselves and country, and without that Railroad, this is what California never can do, so long as she has to depend upon ships to supply her over the water, with bread and meat in time of war.

By a singular coincidence, the same mail that brought your assault on this position, brought me also a letter from Commodore Jones, the commander of our forces in the Pacific. It may be presumed that the Commodore knows something about the subject, and that as he is there on the spot, his opinion on a subject which is professional with him, is entitled to some consideration.

Well: hear what the Commodore says about the necessity of a Railroad to California for the purpose of enabling us to hold and defend that country:—

FLAG SHIP "SAVANNAH,"
Benicia Roads, Feb. 21st. 1850.

To Lieut. Mat'w. F. Maury, &c., &c.—

DEAR SIR:—I observe by the public prints, that you have been presiding at a public meeting, which assembled at Memphis, to consider the great question of uniting the Atlantic States with our Pacific possessions, by means of a National Railroad across the continent. The stupendousness of the projected work, strikes many minds with astonishment, bordering on incredulity and unbelief, while others admit the possibility, but deny the expediency of such a work; even were the real obstacles no more than ordinarily present themselves. We, on this side of the continent, watch with intense interest every move and examine every argument, pro and con, that reaches us, having, in any degree, a bearing upon the great

preliminary question of a railroad, or no railroad, across the continent; which question, I trust, will be definitely and favorably settled at the present session of Congress; and that before its adjournment, nay, before you receive this letter, ample appropriations will have been made, to send out, at least, three parties of exploration, to examine and report on the three routes, known on this side, as the Northern, Central and Southern routes—the first named, if found to be practicable, besides being by several hundred miles the shortest, has many other advantages over all others, which advantages, however, I shall not now attempt to point out, my present object being, merely to introduce for your perusal some brief remarks on the Bay of San Francisco—its harbors and environs, with a short notice of the wants and condition of the present inhabitants of California, the improving immigration, and the means of supplying their increasing wants.

The last of the accompanying series, letter C, I commend to your especial attention, and invoke your assistance in obtaining for the *perishing* inhabitants of California, additional ports of entry, especially *Benecia*, which is the key and the only gateway to the entire mining region, so far as have as yet been worked.

In that memoir you will perceive I assume as true, that the inhabitants of California must, for a long time to come, depend on distant and remote countries for supplies of every description, even houses and fuel, as well as for food and raiment, this is true beyond question. *What then would be the fate of California, should we be unfortunately involved in war, with any superior naval force? A rigorous blockade on the port of San Francisco, for six months would compel the inhabitants to surrender at discretion, as without the* RAILROAD *it would be impossible to succor them by throwing in supplies over land.*

This view must fix the Pacific terminus of the railroad at the straits of Karquinas; and to do that, it must, as it probably will, in any route, cross the Sierra Nevada at Warner's Pass,* and thus follow the western margin of the great valley of the Sacramento to Benecia, one of the finest seaports in the known world.

Should the railroad terminate at San Diego, it would be no use as a means of defense to this section of the territory; and to continue the road from San Diego to the Bay of San Francisco—seven hundred miles—would cost little short of the sum required to construct the main road across the Continent.

*The pass discovered and traced by the unfortunate and lamented Lieut. Wm. H. Warner, of the United States Topographical Engineers, who was killed by the Indians in September last, just as he had satisfactorily solved the great question of a practical and comparatively easy route for a railroad through the Sierra Nevada, through the gate which enters the great basin of the Sacramento, near the source of the river of the same name. (See Gen. P. F. Smith's report to the War Department, upon "Warner's Exploration." signed, J. apC. J.

Thus, and if for no other consideration, the railroad must be made, and speedily made too, to enable us to hold California in a war with France or England, which it would be impossible for us to do without the railroad.

As I hope to be in Washington before the adjournment of Congress, I will say no more at present than to renew assurances of the regard and esteem of

Your's faithfully, &c.,

(signed) THOMAS A. C. JONES.

If, therefore, I have done the cause harm, by putting the railroad upon the true grounds, and the only grounds upon which the Government can ever be induced to undertake it, I am glad to find myself in such good company, and with the Navy to back me, I cannot be wrong.

However, let us agree to differ. You advocate the road upon your own grounds. I'll advocate it upon mine. Both of us will have our shoulders to the wheel; and we are even pulling at the same rope: you from one set of considerations; I from another. But both of us are equally earnest in our desire to see the work under way. Let us, therefore, like true sailors, serving in the same ship, "move cheerily," and give a long pull, a strong pull, and a pull with a will and all together; and we'll have the road. And then, when you ship your first crop of hemp and tobacco over it for San Francisco and a market, I will confess my errors—say that it is of no use whatever, as a work of national defense—that it adds nothing to the military strength or means of defense in California, and that its only use is, to carry to China the bulky products of the Mississippi Valley, that cannot now, notwithstanding the rivers, navigable waters, railroads and canals, find their way from the interior of the Valley States, to New York.

I think, during the famine in Ireland, corn could be bought in the interior of Illinois at ten or fifteen cents per bushel, and even at that famine cost, it could not pay the expenses of getting to New York market. How could it then get to California? I am very willing and anxious to try the experiment, and hope to see the railroad built, that the experiment may be tried. Let us go on and advocate it together.

Respectfully, &c.,

M. F. MAURY,
Lieut. United States Navy.

From the use Lieut. Maury has made of Commodore Jones' communication, we infer that he has abandoned his advocacy of the Southern route, as the best location for the Pacific Railway. This is an important fact, calculated to afford much gratification to the friends of this great project in every part

of the country; for, the special advocacy of an extreme Northern or Southern route, in advance of the action of Congress, is calculated to embarrass, if not defeat, the measure in that body. In thus adopting, as we conceive, the views of Commodore Jones, whose opportunities of observation, entitle his opinions to great respect, the author has shown that his heart is in the right place; that he is open to conviction, and places a higher value upon the welfare and glory of his country than upon his own opinions.

We have no inclination to advert to the author's address, to the members of the Memphis Convention; but beg to remark, that he appears to have misconceived the spirit of our Review, and also, the true grounds upon which we have advocated the construction of the Pacific Railway. We agree with Lieut. Maury, that "it is always better to look facts in the face," but it is of vital importance to the formation of just conclusions, that we examine *all* the facts relating to the subject under consideration, and reject such as are not pertinent.

We have never doubted nor denied the importance of the Pacific Railway, as a work of national defence; and when we said that it was "the weakest of all arguments that could be addressed to the American people," we certainly did not mean to depreciate the argument itself, nor the merits of the ground on which it was based; and, lest we should be misunderstood, we explained why we believed the people would not be affected by it. It is an argument that addresses itself to the statesman; but the people at large take little interest in works of national defence, especially in times of peace.

If we expect to accomplish a work involving the expenditure of so large an amount of money, we must first look to the people; for Congress never will enter upon such an enterprise without their approbation. In our advocacy of the measure, we have never aimed to mislead the judgment, by arguments derived from imaginary or improbable facts. We have first of all, urged the measure as one necessary to unite the people on the shores of the Atlantic and Pacific Oceans, under one Government; and, among other things, have stated what we believe to be true, that the travel and commerce between the Valley of the Mississippi and the coast of the Pacific, will be sufficient to authorise the building of the road, although a single ton of Asiatic merchandise should never pass over it. We have never affirmed, nor do we believe, that the great staples of the Valley States will find a market in Asia, through this or any other route—we believe that they are destined to be consumed at home; for, mankind have, at length, discovered the fact, that it is better to emigrate to the place of production than to pay the cost and charges of transporting the means of subsistence from one continent to another.

Had the author been a reader of the "Western Journal" from its commencement, we feel assured that he would not have misconceived the ground which we occupy in respect to the Pacific Railway. He says truly "that we are both for the road," and we rejoice that we have such an able coadjutor; one so much devoted to the extension of our foreign commerce —to the development of our internal resources and the defence of our common country.

ART. IV.—FEMALE EDUCATION.

BY MRS. HARRIET WESTBROOK.

MESSRS. EDITORS:—In reading several numbers of your interesting and useful Journal, and seeing that its pages are open to any communications that are devoted to moral and intellectual improvement, as well as to agriculture, mechanic arts, &c. I felt inclined to offer a few remarks on the Education of Females; particularly in the west. Believing that a higher degree of mental cultivation than is generally acquired by them, would be a means of advancing, successfully and permanently, the many and varied interests of this very important section of our great republic. Feeling too, there is no ground which requires cultivation more than the minds of my fair country-women, and no piece of mechanism so beautiful, or that wants the hand of the skillful operator so much, as a gifted mind that needs rough-hewing, smoothing and polishing. The subject of Female Education may be a trite one to some, for many able pens and eloquent lips have been engaged, from time to time, in advocating its claims to public attention. But if it does appear somewhat hackneyed, it is a subject of incalculable interest to the young, and cannot be too often or too earnestly impressed upon the mind, until it awakens a feeling of interest among all classes. I have been several years a resident of this fairest portion of my much loved country, and have witnessed with pain, the deficiency in intellectual culture among my own sex—which deficiency seems to be almost overlooked by them. But I am persuaded that it does not arise from any natural incapacity, or because a cultivated mind would not be equally appreciated by them, were their attention but directed to the subject; so it is not so much their fault as misfortune, in not being early taught its importance. If ever I cast a look of regret towards the home of my early years, it is when I draw a comparison between the objects and motives presented to the mind of the young female to influence her: her pursuits, and feelings, and occupations, in that land o.

refinement and superior educational priviliges, and other places where those things are less valued, because less thought about. The fault lies, as I said before, in the earliest impression made upon the mind, and which inevitably stamp its character through life. Are not young ladies often left to infer from the instruction and management of their friends, that an advantageous settlement is the ultimatum of their existence? which of course creates a love for display, an indolent ostentatious manner of spending time, which most certainly and effectually, in nine cases out of ten, excludes from the mind all useful subjects of reflection. As a result, the graces are oftener consulted than the oracles of learning and wisdom, which make persons truly wise and good, and yield the possessor ten-fold more happiness. More than once have I heard it acknowledged, with a great deal of *naivete*, by grown up girls, that they had never in their lives, so much as once reflected that they were created moral and intellectual beings; that they possessed minds susceptible of high improvement; that it was an imperative duty—one required by their Creator, as well as by the well-being of society—to cultivate the talents that were given them, to the highest possible degree. Is it strange, where there is such a want of proper training, that we witness among the mass, a perfect chaos of mind? Perhaps the parent thinks these things will come, of course, or, that it is no matter whether they do or not. There are many schools instituted expressly to aid in bringing forward such minds in the work of education; and some of them, no doubt, deservedly, possess the confidence, and to some extent, the interest of the public; and many are sent to them to acquire an education; but how little can be accomplished there under the best organisation? at the most, the teacher can but lay a foundation—form a skeleton of the work to be filled out at other times and under other circumstances, than the schoolroom. The teacher's efforts are necessarily circumscribed, and without the co-operation of both parent and pupil, can effect but little. The pupils are placed in school, with certain restrictions upon the teacher, not to require too much from their delicate girls, as they are remarkably precocious, and neither their habits nor constitutions will bear restraint. Thus the work of education is confined merely to the mechanical work of conning and reciting lessons, a few hours each day in the schoolroom.

After spending a few years in this superficial manner, at the time of life before the judgment is matured, or the reasoning faculties taught to exercise themselves, the young female leaves school—has finished her education. Thus prepared, to all intents and purposes, to become the victim of circumstances in after life. Of what practical benefit is such an education, as it is called? Does it qualify her in any degree to fulfil the

varied, and often arduous duties she is frequently called upon to perform? Is she thus fitted to resist the temptations of an alluring and sometimes deceitful world?—to oppose its follies—to strive against and overcome the undercurrent of immorality, which is always present under some seducing form to lead astray those who have not strength to resist? In a word, is she prepared morally and intellectually, to be a bright and shining light to her sex—to encourage the weak, and to bring back the wandering to virtue and to God? A mind and heart to be thus educated, requires something more than a little smattering of some of the sciences—it is the earnest work of a life-time, with books or without them; and if she lived the ordinary length of two or three lives, she could never have finished her education so long as there lies an unexplored path in science, or one in which she has not perfected herself in virtue and religion; still must she go on learning, and higher higher still, should be her motto. If mothers would but reflect rationally, upon what is to be the destiny of their daughters, and have their eye fixed upon that from their earliest infancy, that they must fill the station of daughter, sister, friend, and in all probability, that of wife and mother; and how much need they have, to bring into exercise every power of their minds and bodies, should we not see different results both mental and physical? It belongs to the mother to instil into the mind of her child a desire for improvement—a love for study, and an ennobling ambition to rise above the vain and trifling pursuits which occupy too much of the time and attention of young females. Might she not, by dint of precept and example, be led to esteem it a greater pleasure to spend a portion of each day in improving her mind, by acquiring useful knowledge, the tendency of which would elevate and strengthen her character, than in reading novels and studying fashion plates? If it be the love and esteem of society she desires, it may, I think, be far more permanently secured, by possessing a well-balanced mind, disciplined by thought and well stored with useful knowledge, which will enable her to be a rational intelligent companion, and capable of adapting herself to all circumstances. Life is not all sunshine, there is the shade as well as the light, to pass through; and she who looks outward for all her enjoyments, must oft, indeed, feel an aching void. There is no person's world so large, and so uniformly bright, as to make them always happy; and, if they have not secured to themselves a home within—an inner sanctuary, into which to retire when, perchance, a storm may arise without, then, most assuredly, their tranquillity and peace of mind must, sometimes, be shaken.

St. Louis, May 22, 1850.

From the Merchant's Magzine.

ART. V.—TEA: AND THE TEA TRADE.

BY GORDON NYE, ESQ, MERCHANT OF CANTON.

"The knowledge of the tea plant, among the Chineese, cannot be traced back further than A. D. 350, but its generel introduction does not date prior to about A. D. 800.*"

The Portuguese navigators were probably the first to bring tea to Western Europe, at some period during the sixteenth century. In Persia it was in general use in 1633. In the early part of the seventeenth century, the Dutch East India Company imported some Tea into Europe; but it was scarcely known in England until after the marriage of Charles II. with the Princess Catharine of Portugal, in 1662. In 1669, the English East India Company's first invoice of tea was received in two canisters, containing 143 1-2 lbs. In 1678 they imported 4,713 lbs.; but this quantity so glutted the market that but little was brought for several years after. In 1680 the English Company opened a direct trade with China. In 1700 the import had reached 60,000 lbs. per annum. In 1721 it had reached 1,000,000 lbs. In the 100 years from 1710 to 1810, there was sold, at the East India Company's sales, 750,219,016 lbs. of tea, the value of which was £129,804,595 sterling. Of this quantity 116,470,675 lbs. were re-exported.

Since the commencement of the present century, 1,385,949,-566 lbs. of tea had been sold in England, (down to 1845,) and there had been paid into the British exchequer about £167,643,-702 sterling on this last mentioned quantity of tea.†

The trade with the United States, commenced in 1784 with one ship and the number of vessels had increased to more than a dozen, five years afterwards; but the war with England, and other causes rendered it fluctuating in amount until about 1820, in that year the imports from China amounted to 4,973,463 pounds in 1845, it reached 20,762,558 pounds.

In reviewing the trade for the last period of five years, we find a remarkable uniformity in its amount, as shown by the exports from China hither, which, for convenience, we now repeat the gross sums of. Thus, there were shipped to this country in—

	1845.	1846.	1847.	1848.	1849.
Green...lbs.	13,812,099	14,236,082	14,388.938	15,340,565	13,834,453
Black.....	6,950,459	4,266,166	4,498 798	3 998,578	4,875 564
Total..	20,762,588	18,502,248	18,887,736	19 339,083	18,710,017

Showing an average of about 14,323,000 pounds of green, and

*Dr. Williams' "Middle Kingdom."

† Mr. Martin's report to the Committee of the House of Commons.

of about 4,917,000 pounds of black; and of both, 19,240,000 pounds per annum. This presents a uniformity such as no other article of importation does for a like period, and indicates a commerce free of the elements of fluctuation.

We find therefore, that the influences which have disturbed the course of prices here are external, or of an imaginary nature, and that the remedy lies in the adoption of a new system of sales, by which a regular and more gradual offering of the annual and inevitable accumulation of the importations in the spring may be provided for. As to the period of shipment from China, the laws of nature control the operations of the merchants; for the incoming of the crop of tea at the shipping ports is naturally in the autumn; the monsoon soon after favors the vessel's return hither; and the approaching season of humidity does not less powerfully than the winds tend to warn the merchant against delay in China.

These natural and uncontrolable causes, then, indicate clearly the necessity of the suggested remedy. The considerations of its expediency have already been presented in the previous papers, in anticipation of the opening of the spring trade here; and the subsequent course of the market, has, in the most marked manner, confirmed the opinions then expressed upon this point, after due allowance for the unusually limited country demand during the last six weeks.

There is no doubt but that the highly respectable auction houses now employed to sell the teas imported, would gladly concur in a new system of sales, whereby the amount obtained, and, as a consequence, their own commissions would be considerably increased, while their convenience would also be promoted. A great convenience would result to all the parties to the trade, also, in the greater diffusion of the payments for the teas over the year—indeed when the large aggregate amount of the sales of tea is considered, a greater equalization of the payments over the year will appear as a benefit to all branches of business.

The question of consumption is always recognized as the most important element in considering the progress of commerce in any article, and in the examination of it with reference to *tea*, it is found to possess peculiar interest. It is an article whose intrinsic qualities are the least understood, generally, and the examination and judgment of which, by the few who have some practical experience in it, is the most important of all those products which enter into general consumption. No other necessary of life offers so great a variety of kinds, much less such a diversity of qualities; nor is any other so valuable in proportion to weight or bulk; yet no other is, as a general thing, so hurriedly examined and sold.

The evils resulting from this haste, and consequent incom-

pleteness of examination, are not confined to the mere fluctuation of prices, but affect the management of the dealers in all parts of the country, and thus act prejudicially upon consumption; whilst, as has been before remarked, the fluctuation in prices induces the shipment of very inferior qualities, and this prejudices the consumers against the good tea.

The general want in the nicety of judgment in the selection of good tea, and the consequent undue regard paid to the "style" or form and color of the leaf, rather than to the intrinsic quality, which can only be well tested in the cup, and which is often indicated by a broken leaf, whether in green or black teas, for the reason that the youngest leaves are naturally the tenderest and soonest broken, and, at the same time, the richest in flavor, is at present a check to the growing predilection for the beverage. Other misapprehensions exert a similar influence; one of these, the general impression that teas seriously deteriorate in quality by keeping a year or two; whereas, all kinds of black tea, save only the delicate white leaf of the Pekoe, which rarely or never comes to this country, are really improved by keeping a year; and the kinds most used here, Ouloong, Ning-Yong, Ankoi and Congou-Souchong, really require the effect of the lapse of time in abstracting the *fire* which has been communicated in the curing of the leaf, to render them mellow and palatable to those persons who have been accustomed to the use of tea in China or England; and a very considerable portion of the green teas would gain, rather than lose, in appreciative flavor, by being kept a year. It is necessary to say, however, that tea of no kind can be kept sound in a small parcel, or, in an open package, any considerable length of time, although a package of sixty to eighty pounds, would, if originally well cured, keep for several years unimpaired in a dry, airy place.

The Chinese do not drink new tea, but consider it necessary to allow time for the *fire* to escape; and they say that the highly-fired black teas of the better qualities, really improve in flavor by being kept two years in tight leaden boxes.

To the various causes alluded to must be attributed the comparatively slow increase of the consumption of tea, and the wide disparity shown by the really immense increase in the consumption of coffee. That the introduction of the poorer qualities of tea into the west and south-west, which were noticed in Part First, where the chief increase of the population has accrued, has had the effect to turn the consumption upon coffee, there is no doubt: for we find that the chief increase in the use of tea is in the Eastern and Middle States, including, however, Ohio, where the dealers and consumers appreciate the better class, and where the judgment of qualities, from long habit, is better, and if this were not so, the

greater economy of tea, as compared with coffee, irrespective of the distance of place, and which is more in proportion to the distance of carriage, as well as the greater portableness and convenience of it, would have kept the consumption at its relative proportion, as shown in other parts of the country. That tea, when properly used, is much the most economical, and its effects salutary, as compared with coffee, whose effects are usually injurious, there is no doubt. And it is understood that the physicians, during the prevalence of the cholera, last season, recommended the use of black tea instead of coffee. There are already indications of the turning of the consumption upon black teas in Ohio and other parts of the West, in lieu of coffee; and it may be hoped that, as the necessary knowledge in preparing it extends, and the better qualities become appreciated, the disparity in the consumption of the two beverages will be removed. The sincere efforts of every one in the trade should be used to this most desirable, because mutually beneficial, end.

By judicious and persevering efforts, the consumption may be brought somewhat nearer to correspond with the ratio of it in the United Kingdom, where "a large proportion of the population does not consume tea," owing to its high cost. In 1846, it will have been seen, the rate per head of the whole population, (including Ireland,) was 1 5-8 pounds; at which this country would now require about 30,000,000 pounds, instead of 20,000,000; but, as has been before stated, the proportion of persons who can afford to buy tea in this country is immeasurably greater than in Great Britain and Ireland; and when it is considered that in England, as is stated in the papers of Mr. Norton, in Part Second, "in private families, whose expenses are based on competence, the consumption of tea is twelve to thirteen pounds per head, and that domestic servants in such families, when allowed tea, have nearly one quarter of a pound per week, or thirteen pounds per annum," the disparity in the consumption in the two countries is truly surprising; and suggests the hope of a greater ratio of increase than the former statistics have shown. The past and present seasons, it is believed, will be found to show a greater increase.

The following remarks referring to this branch of the subject are extracted from an editorial notice of the first and second of these papers in the Literary World of March 2d:—

"One striking result is prominently brought out by the apparent incongruity of cause and effect. It is, that the increase of the consumption of tea is proportionaby higher in England than in this country, notwithstanding the duty in one country is enormous, and in the other nothing at all. In England, there is a fixed duty upon all qualities of tea, Mr. Nye

tells us, of about fifty cents a pound! The explanation of the different progress of consumption in the two different countries, Mr. Nye finds in a great degree in the use of better qualities of tea in England than here; for the cost of transportation, &c., being as great on a tea of the higher qualities as on the lesser, and the duty being uniform, the obvious effect is to cheapen in comparison the better article. Thus in England the consumer of a poor tea pays a tax of 200 to 400 per cent. on the cost, while the high-priced tea pays only 50 to 100. Between the two articles the latter thrives, and, the appetite growing by what it feeds on, the taste for a genuine article of luxury overcomes the cost and the burden imposed by the government. In the United States, on the contrary, poorer kinds of tea are introduced, poorer in quality and actually in economy, and the use of the beverage limited by the distaste created from the inferior article. This is the present working of the system; but it must soon change when it is discovered where the defect lies. Better teas will be found to be cheaper; and the more widely they are introduced, in the more rapid ratio will spread the demand."

THE QUESTION OF SUPPLY.

This question seems to be but little understood generally, and much misapprehension exists amongst those who are connected with the trade. Opinions have been stated which appear contradictory.

It has been shown in the previous papers that the downward tendency of prices the two past years, had led to the absorbtion of the old stocks, by the consumption; and it is now apparent that the supply of tea in China is inadequate to the wants of the consuming countries, although the early in-coming of the crops, and prompt shipment of them to England and the United States, appears, at the moment, to indicate an abundant supply. Prices materially higher are required to induce the collecting and curing of the inferior descriptions of the leaf, by which to enlarge the shipments. It seems not to be generally known, either, that an increase of production by planting is only possible in two or three years, which period is required for the plant to grow to maturity and produce.

Every successive mail from China, since the two first papers were written, has brought a confirmation of the opinion of the writer in the fact that the lower grades of both black and green kinds, are in considerably less than a proportionate supply this season, showing, as this does, that the prices of the two past years did not suffice to pay for the tea; and it is well known in England, that the total supply of Congou will be less than the consumption there. It seems equally certain, that the imports into this country before the first of October

will fall short of the wants of trade. At the present moment, the data by which to sum up the supply from the first of January to the first of June, is at hand; and taking the difference in the stocks in "first hands" on the first of January of each year, the supply to the first of June this year will be about fifteen thousand half chests of Young Hyson, and a considerable quantity of all other kinds of green tea, short of last year. There was no American vessel in China at the last dates, nor will any arrive thereafter, probably, in time to load and reach here before the close of the spring trade, or about the first of July. There was a deficiency of 2,000,000 pounds of green tea in the export to England, to the last dates; and if this be made up (consisting chiefly in Young Hyson) from the stock in China, there will be a large deficiency, even if every package be taken, in the year's shipment to this country. This deficiency in England must be made up from this country, if not from China, for the tea is wanted for actual consumption; and, in either case, the supply here must prove very much short of last year's import. The character of the lessened export of green tea to England, indeed, indicates that a considerable quantity of genuine tea will be required from this country, as stated in the following extract of a London circular of the 4th of March:—"The following is an extract of a Canton letter of December 26th:—"The purchases of these teas (the new crop of green) for England, have been very limited in extent, the run throughout the season having been almost entirely upon the Canton sorts, of which fully four-fifths of the export consists; and of these, not a little is altogether spurious."*

In December, 4,000 packages of the finest Hysons were taken at Canton for Portugal; and a large quantity of Hyson skins for Sydney.

Considering, then, that there is not only a deficiency of 2,000,000 pounds in the export to England of green teas, but a still greater one of genuine tea, and a considerably lessened supply provided for this country to the 1st of June, there should be a brisk demand here at higher prices than last year for all kinds of green teas.

THE TEA TRADE WITH RUSSIA, HOLLAND AND OTHER COUNTRIES OF EUROPE—AND WITH THE COLONIES OF ENGLAND.

We now come to a review of the trade with the lesser consuming countries.

That with *Russia*, so far as has been ascertained, has been less subject to fluctuations, and is a gradually progressing one since 1820; but the exact statistics of it, for all the intermediate years, have not been obtained.

* The same letter states that the supply of good and superior green teas is less than in ten years before.

The following are the different statements, so far as obtained :—

IMPORTATION OF TEA INTO RUSSIA.

Years.	Quantity. Poods.	Value. Roubles.
1824	154,197	6,260,429
1825	133,514	4,807,049
1826	130,562	5,675,992
1827	161,958	6,719,466
Total poods	580,231	23,462,636
Of which exported	3,843	775,730
Leaving for consumption	576,388	22,686,906

On an average, 144,097 poods, of the value of 5,671,726 roubles ; or in English weight and money, 5,187,496 lbs., value £248,346 sterling.

In 1832 the import into Russia was 175,474 poods, or 6,461,-064 lbs.

In 1847 Mr. Martin estimated the consumption in *Russia* at 10,000,000 lbs.

It consists almost entirely of black tea ; and two to three years are required, in the transit through Siberia, to reach *St. Petersburg*.

The next country in importance of those now under consideration in the consumption or importation of tea, is *Holland*. The shipments to that country have varied very greatly from the earliest history of the trade to the present time. During several distinct periods of time great quantities of tea were shipped to *Holland*, for introduction, by smuggling, into England, varying with the inducements presented by the revenue laws. In 1783 to 1794 the export from China by the Dutch averaged about 4,000,000 lbs., per annum. In 1818 to 1829 there were shipped to the Netherlands, in American ships, about 19,000,000 lbs., and by the Dutch, in the same period, 492,382 quarter-chests of 66 lbs., each. From 1828 to 1838 there were considerable shipments in American vessels almost annually.

In 1838 the consumption of tea sent into and through *Holland* was estimated at about 2,800,000 lbs. per annum. At present the direct shipments to *Holland* are less than this quantity ; and not only that country, but every other one of *Europe*, except *Russia*, is now supplied, a considerable proportion of its wants of tea from England.

The following table contains the account of the recent exports to the continent of Europe :—

EXPORT OF TEA TO THE CONTINENT OF EUROPE.

GREEN TEA.

	1846-7.*a*	1847-8 *b*	1848-9.*c*
Young Hyson ..... lbs.	202,422	27,200	24,800
Hyson	291.268	117,300	88,900
Hyson Skin	149 219	43,300	40,100
Twankay	190,773	124,100	92,500
Imperial	108.044	62 000	91,600
Gunpowder	63 219	59.500	21,200
Total Green	1,004,945	433,400	289,400

BLACK TEA.

Congou	1,905,942	1,027,300	1,231,600
Souchong	641,046	372,300	119,600
Pouchong	23,300	.....	.....
Ouloong	21,600	10.300	.....
Flowery Pekoe	677,633	150.600	146,300
Scented and plain O. Pekoe	58,300	25,700	.....
Caper	2,100	39,100	13,900
Total black	3,329,921	1,618,300	1,511,400
Total green	1,004,935	433,400	289,400
Total pounds	4,334,866	2,051,700	1,800,800

a In 15 vessels; *b* in 7 vessels; *c* in 8 vessels.

To *France* two or three vessels with parts of cargoes of tea make up the annual shipment from *China*.

To *Portugal*, some years, about 10,000 chests of Hyson are shipped through Macao by Portuguese vessels.

To *Hamburg* and *Bremen* two or three moderate cargoes make up the average annual shipment from *China*.

To *Denmark* and *Sweden* one or two small shipments in a year comprise the direct supplies.

Australia has become the most important consuming country, in proportion to population, as the table below will show: and as the increase of the population and of their means is very rapid, there will be a rapidly increasing outlet there for tea :—

EXPORT OF TEA TO AUSTRALIA.

BLACK TEA.

	1846-7.*a*	1847-8.*b*	1848-9.*c*
Congou ..... lbs.	784,000	472,100	902,300
Souchong	93.000	19,200	32,600
Scented Orange Pekoe	2,600	.....	800
Scented Caper	7,600	.....	.....
Plain Orange Pekoe	2,000	.....	.....
Plain Caper	1,000	19,200	.....
Flowery Pekoe	200	.....	.....
Torts	5,100	.....	3,400
Total black	895,500	510,500	339,100

GREEN TEA.

Hyson Skin	2,893,000	1,592,400	2,046,900
Twankey	59,300	29,400	3,700
Hyson	30,500	11,500	9,300
Young Hyson	7,600	2,000	7,000
Imperial	5,700	1,300	600
Gunpowder	17,700	15,400	15,500
Total green	2,323,800	1,552,000	2,083,000
Total black	895,500	510,500	939,100
Total pounds	3,819,300	2,162,500	3,022,100

a In 22 vessels; *b* in 17 vessels; *c* in 24 vessels.

This closes the separate view of the minor consuming countries.

The present consumption of *tea* by all the *world*, save *China* and *Japan*, may be estimated in round numbers as follows:

Great Britain and Ireland will consume this year ..... lbs.		52,000,000
Cont'n't of Europe & other countries exp't'd f'm Eng.	4,500,000	
Continent of Europe, except Russia, direct	2,500,000	
	7,000,000	
Deduct for "other countries"	2,000,000	
Leaves for the Continent of Europe, except Russia		5,000,000
British North America, East and West Indies, Cape of Good Hope &c., through England and direct		3,500,000
Australia		3,500,000
Russia		10,000,000
United States of America, including exports to various countries		20,000,000
South America, Eastern Islands, &c		500,000
Total pounds		94,500,000

In concluding the series of these papers, we annex the following account of the growth and curing of tea, &c., extracted from Mr. Martin's report to the committee of the British House of Commons:—

"The territory in which the large amount of tea consumed in Europe and America is grown, is south of the Great Yantze-Keang River; the whole region lying between the 27th and 31st degrees of north latitude, and from the sea coast inland for five hundred to six hundred miles, may be considered capable of producing tea; but the most favored region is the generally sterile hilly province of Fokein, and the provinces of Keangsoo and Chekeang between the 25th and 31st degrees of north latitude. This territory, which extends over 350 to 400 square miles, is composed principally of the debris of a coarse granite, and of a ferruginous sand-stone, crumbling into decay; but when well comminuted and irrigated, yielding sufficient for the hardy tea-plant, (a camellia,) whose qualities, like that of the vine, are elicited by the nature of the soil, the elevation, the climate, and the solar aspect to which the shrub is subjected.*

*I found the tea shrub in several parts of China planted as hedge-rows or fences to fields and vegetable gardens.—*R. Montg. Martin.*

It is generally stated that green and black teas are produced from shrubs of the same species, with a slight variety; the leaf of the green being larger and broader than that of the black; the former leaf is rounded, the latter elliptic, flatter, and more coriaceous.

The cultivation in different soils, the picking of the leaves at different stages of expansion, and subjecting them to greater or less degree of heat and manipulation in dying, is the cause of considerable variety; probably the same difference exists as between the red and white grape, or the black and white currant.

The shrub is cultivated with great care, planted in quincunx rows, in beds, by seeds, chiefly along the sides of hills with a southern aspect, and on a poor gravelly soil, and the debris of decayed granite and disintegrated sand-stone, and where nothing else will grow, and it is used for hedge-rows or boundaries.

The height varies from three to seven feet, and it is very leafy. The flower resembles the wild rose or briar, flower, common in English hedges in autumn; the seed vessel is a nut of the size of a small hazel, or rather like the castor oil nut, but rounder: three red kernels are in each nut, divided by capsules, and from these a quantity of oil, termed "tea oil," is extracted, and used for common purposes by the Chinese. Six or seven seeds are put into each hole when planting; in 12 or 18 months transplantation takes place, and about the third year the leaves are first plucked. At seven years of age the top is almost cut down to the stem (as gardeners do with old currant trees,) and a more leafy set of shoots spring up the ensuing year.

The age of the tree is unknown; it has a useful duration, probably to fifteen or twenty years. It is an evergreen, and blossoms from the end of autumn throughout the winter until spring. The leaves are dried by placing them first in flat baskets, and exposing them to the air and a moderate degree of sun. They are then further dried or tatched in thin pans of iron, heated by a small furnace of charcoal, the leaves being kept constantly turned round by the hand, and rolled or rubbed between the fingers, to give the leaf a rounded form. When sufficiently firee, it is picked, and packed for Canton in chops of 100 to 1,000 chests, each chop having marked on it the name of the maker, the district where the tea is grown, its quality, date, &c.

Copper is not used in the preparation of any description of tea; iron pans are solely employed. I visited a tea manufactory five miles above Canton, where about five hundred men, women and children were engaged in converting coarse-looking refuse leaves into several sorts of green tea. A series of large flat iron pans were placed over a range of furnaces heat-

ed by charcoal, in several successive degrees. The teas, which had been previously picked and sorted, were then placed successively in these pans by men, who each rolled them to a certain extent. After passing four or five pans a small quantity of turmeric was sprinkled over the leaves in a pan highly heated, and in the next pan a blue powder, composed of Prussian blue and gypsum, was added, which gave a delicate green bloom to the leaf, which formerly had been of a dingy black or brown hue. The tea was then gradually cooled in large shallow baskets, then placed in a winnowing machine and sifted into different sizes, the smaller being packed and sold as gunpowder or pearl tea. Thus, the greatest refuse of tea, or the leaves which had passed through the tea pots of the Chinese, were converted into "Gunpowder," "Hyson," and other teas, for exportation, as the Chinese never drink green tea. The proprietor of the manufactory told me that the green tea thus prepared, was sold to the Americans, who consume but little black tea. It is said to be difficult to detect this colored tea from the pure, and as the Americans have good tea-tasters at Canton, the English probably receive their share of the adulterated manufacture.

The names of teas are a very imperfect criterion of their quality. Formerly Bohea was the principal tea in use; now the title is used to designate the lowest description of black tea. It may be useful to indicate the designation of the names in general use.

Bohea is an English corruption of the words "Woo-e," "Voo-Yee," or "Ba-yee," some hills of that name, about 12 miles in circumference, in Fokein, on the borders of Canton province, yielding a common tea of that name, which is gathered three times a year. It is called by the Chinese "Tacha" (large tea).

Congou, from "cong-foo," laborer, is of a better quality nan Bohea, less dusty, and with a rougher and more astringent flavor.

Wo-ping teas are so called from a district of that name in Canton province, and when mixed with Bahea, form "Canton Bohea."

Ankoi, a coarse tea from the district of that name.

Campoi, from Keinpoi, selected. It is a stronger tea than Congou.

Souche, or Caper, from Swangche, double preparation, or choolan, favorite pearls. A great deal from Ankoi district.

Souchong, from seaore-chong, scarce or small, good thing. It is carefully made from trees three years old, grown in good soil. Older trees, in a similar situation, produce Congou; older still, Bohea and other inferior teas.

There are different sorts of Souchong, and it is not easy to

get this tea pure and good in England. The leaf is of agreeable fragrancy, somewhat like new made hay; the leaf crisp, of a glossy black color, and when subjected to boiling water, of a sick-red hue; and the liquid is an amber brown.

Peko, or Peho, from pih, have white petals or hair, so called from being made of young leaves, gathered in when the blossoming is over spring, when there is a whitish down or hair on the leaf.

The tea flowers are fragrant mixed with the leaf, and give a fine odor and flavor to the tea.

Twankay, from Tunkay, a district where the tea is generally made. In green teas it, corresponds in quality to Congou among black teas.

Singlo, from Sunglo, a mountain in Ganhway. Both these teas have large flat leaves, and are not much rolled.

Hyson, from Hechuen, genial spring or first crop, when the young leaves are gathered.

Hyson skin, Puha tea skin. In Chinese "skin" signifies the refuse. It is formed of the leaves rejected in the preparation of Hyson. The dealers in London give it the name of bloom tea.

Young Hyson, from yee-tseen, before the rains. It is a very small leaf.

Gunpowder is the picked, small, well-rounded Hyson, like shot, also called Pearl or Imperial tea. Several other teas with new names are being introduced.

The different teas are prepared roughly by the tea farmers, and then taken to the manufacturers, who prepare and sort the teas according to the districts in which they are grown, the variety and age of the tree, the size and quality of the leaf, &c. The leaves are passed through sieves of different sizes before their quality is determined. The judgment of the manufacturer in selecting and sorting, and the skill of his workmen in firing or tatching the leaf, is of the first consequence. The better quality teas are more frequently roasted, and each leaf separately rolled. The finest descriptions do not reach England. The mandarins pay very high prices for those teas, and their flavor is so delicate that they would not bear four or five months' sweating in the hold of a ship. The production of tea for the use of the Chinese middle and lower classes must be very great, as it is used at every meal.

The tea found in Russia, conveyed by land and river carriage thither, is said to be superior to the tea generally used in England. This may be owing to the leaf being less fired; many of the finest teas drunk in China would not bear five or six months' stowage in the hot and humid atmosphere of the hold of a ship, and therefore, the teas conveyed to Europe by sea, require to be dried and fired to a degree which must injure their quality. Teas that I drunk at Foochoo, Ningpo,

and Shanghae, were not highly dried, and had a very delicate flavor, when drank as the Chinese do, without milk or sugar; but these teas could not be preserved more than a few months. The Chinese say, that the high-dried superior black teas improve in flavor by being closely packed in air-tight leaden cases for one or two years. Some of the finest teas in China scarcely color the water, and the preparation consists solely in pouring boiling water on a small quantity of the leaves placed in a teacup, fitted with a close cover; among the highest classes, a silver strainer is placed at the bottom of the teacup. Tea made up into balls, or compressed into the form of bricks, or of flat cakes, is exported to Tartary, Tibet, Burmah, &c., boiled with milk, and constitutes an agreeable and nutritious beverage.

The constituent properties of tea are :—

	Black.	Green.		Black.	Green.
Tannin	40.6	34.6	Insoluble fibre	44.8	51.3
Vegetable Albumen.	6.4	5.7	Loss	2.0	2.6
Mucilage	6.3	5.9			

The tannin blackens salts of iron. The proportions of tannin must vary with the quality of the tea. A salifiable base, named "theine," in regular colorless crystals, has been obtained from tea.

The ashes of black and green teas yield silex, carbonate of lime, magnesia, chloruret of potash. In distillation tea yields a volatile oil, and according to some, a small quantity of resin, soluble in alcohol, and possessing the odor of tea. The effects of tea on the human system are, first stimulant, and then narcotic, according to the strength of the beverage. In moderation, tea is an excellent diluent; it promotes digestion, and stimulates the renal glands.

ART. VI.—IMPROVEMENT OF THE MARAMEC RIVER.

We are indebted to Geo. C. Sibley, Esq., late President of the Board of Internal Improvement of the State of Missouri, for the following Report on the navigation of the Maramec river.

Until we saw this report, we entertained the opinion that the Maramec was susceptible of improvement by the consruction of dams and locks at comparatively little expense; and that this mode of improvement was the one best calculated for the transportation of the iron, and other heavy commodities of the country bordering on this stream. But, assuming that the survey and estimates of Mr. Morell, the Chief Engineer, are correct, it would appear that slack water navigation is scarcely practicable, and, a canal would in all probability, cost quite as much as a railway.

This view of the subject places the construction of the Pacific Railway in a more important light than we had before considered it; and affords a strong argument in favor of locating the route as near as practicable to the iron beds of the Maramec Valley.

We are informed that the iron ore of the Maramec is equal in its quality to that of the Iron Mountain; and were facilities afforded of transporting the metal to market, a sufficient quantity would be produced in a few years, to constitute an important item in the business of the road. We regard the Valley of the Maramec, including its tributaries, as the richest mineral region east of the Rocky Mountains; and in view of the difficulties in the way of improving the navigation of the stream, it would seem to be the true policy of the Pacific Railway Company, to locate their road so as to encourage the development of the mines, and at the same time, secure to itself the profits accruing from the transportation of their products.

The profits of the road, as well as its usefulness as a public work, will depend, in a great degree, upon its being so located as to cause an active development of our mineral wealth south of the Missouri river, and to ensure such a location, the labors of the scientific geologist are little less important than those of the topographical engineer.—EDITORS.

SURVEY OF THE MARAMEC RIVER.

The survey of this river was commenced at Massey's Iron Works, which are situated two hundred yards below the "Head Spring," which is the main source of the Maramec. The quantity of water flowing from this spring was ascertained by measurements, taken at an unusually low stage of water, to be 5,658 cubic feet per minute. About eight hundred yards below the Iron Works, the waters of the "East Fork" are added to those of the spring, and the quantity is increased to 8,304 cubic feet per minute. In its farther progress, the river receives constant and frequent additions to its quantity of water, and after passing the Curtois, its volume, at ordinarily low water, amounts to 57,200 cubic feet. It afterwards receives large contributions from the Bourbeuse on the north, and from Big River on the south, besides supplies from many minor streams; but the river was always, during the survey, at too full a stage, after reaching those streams, to allow of its minimum quantity being ascertained. It may, however, be approximated by supposing that, after allowing for evaporation and absorbtion, the quantity would be doubled, or be equal to 114,400 cubic feet per minute.

From the base of the dam, at the "Head Spring," to the mouth of the Courtois, is 38 1-4 miles, and the fall 140 feet; from the mouth of the Courtois to the mouth of the Bourbeuse,

the distance is 49 3-4 miles, and the fall 157 feet; from the mouth of the Bourbeuse to the mouth of Big River, the distance is twenty-eight miles, and the fall 51 1-2 feet; and from the mouth of Big River to that of the Maramec the distance is 56 1-2 miles and the fall 42 feet; the total distance being 172 miles, 1008 yards, and the total fall 390 1-2 feet. The greatest fall at any one place, is at a point about fifteen miles from its head, where the descent is 6.10 feet in 950 yards, with a minimum depth of 1.20 feet. At Sherman's Bend, six and a half miles below this, there is also a fall of 6.100 feet in two thousand yards. The remainder of the fall is generally distributed into rapids of great length, giving to the current of the river, at ordinarily full water, great velocity every where, except near its mouth.*

The bed of the river is usually composed of disintegrated rocks, which constitute the geological formation of this region. These rocks are generally silicious lime-stone, intermixed with chert or horn-stone. They rise into high, and, frequently, perpendicular bluffs, at the foot of which, either on the one side or the other, the river flows, leaving, on the side opposite the bluffs, a narrow strip of bottom land. These bottoms, when in a state of nature, are covered with a thick growth of heavy timber, and their elevation is, in most instances, less than the height to which the river rises in its main freshets; the greatest range of which, as far as ascertained with certainty, is about twenty feet.

The country which borders the river on either side is elevated and broken; and the covering of soil upon its rocky subtratum, is too slight to absorb much of the downfall water, which is, consequently, quickly drained into the minor streams and precipitated into the river, thus causing it to rise suddenly; while, at the same time, its fall is so great as to carry off, as quickly, this accumulation of waters, upon the cessation of the cause that produced it. These great and sudden fluctuations in this river, together with its great fall, effectually preclude any improvement of its natural navigation that shall have any claims to permanency or utility.

An artificial navigation could be effected by a connected series of dams and locks. These dams could not be raised to more than an average height of ten feet above the bed of the river, without great damage to all the bottom lands. Dams of this elevation would give to the locks an average lift of six feet, upon the supposition that the navigation was adapted to vessels drawing three and a half feet. This would require

*Note —It was ascertained by the survey for a railroad to the Iron Mountain, that the surface of the water in the Maramec, at Dougherty's Ferry, twenty one miles above its mouth, is nearly coincident, at low water, with the surface of the water in the Mississippi, at St. Louis, when it is at its usual stage of summer navigation.

the erection of sixty-five dams, and the construction of the same number of locks; which, upon the supposition that the locks are made of dimensions sufficiently large to pass the smaller class of steamboats, and built in the cheapest manner, of durable materials, would cost not less than $45,000 each dam and lock, or $2,925,000 in all. But, the frequency of these locks, occurring on an average, once in every 2 5-8 miles, together with the abrupt curvature of the river, will prevent the economical use of steam in its navigation. The expense for a slack water navigation for keel boats, would be as great as that above estimated for steamboats; for the cost of the dams would be the same, and the diminished cost of the locks would be fully compensated by the expenditure necessary to construct a towing path on one side of the river, throughout its whole extent.

An independent canal, with its levels so adjusted as to give the greatest facilities for manufacturing purposes, would be, decidedly, the best improvement for the valley of this stream. This could probably be effected for $20,000 per mile, or for the total sum of $3,440,000. This sum is large, and, probably, beyond the present ability of the country; but when the great public benefit that would be attained by the construction of a navigable communication to the mountains of iron ore that lie at the head of the river, and the mineral wealth that is in its vicinity, added to the immense water power that would be created by this improvement, are considered, it is but the reasonable hope of the patriot that the time may soon arrive when either the capital and enterprise of individuals, or the resources of the State, shall be directed to the prosecution of this work.

It is difficult to conceive a position having greater facilities for the manufacture of iron, than the one occupied by "Masey's Iron Works." They are only two hundred yards from a fountain which perpetually sends forth a volume of water, of nearly uniform temperature, and equal to the propelling of machinery to any desirable extent; and they are supplied with ore, of the richest quality, excavated from the side of a ridge that might well challenge the name of mountain, and which is not more than six hundred yards from the furnace. In procuring this ore, all the material excavated, with the exception of here and there a small quantity of soil that has accumulated amongst the ore at the surface, is hauled to the furnace and smelted, without the previous process of roasting to free it from its impurities, and yields sixty-five per cent. of pig metal, which, when manufactured into bars, forms an iron that, in useful qualities, has no superior in this country. The wooded country that surrounds these works, is extensive, and the want of fitness of the greater part of it for cultivation, will always

secure to them an abundant supply of charcoal; in addition to which, there has been a recent discovery of bituminous coal within eighteen miles of the works, which is of good quality and supposed to be of great extent. But with all these facilities for the production of iron, these works, although directed by one of the most experienced, energetic and intelligent of manufacturers, are of but limited utility, and they supply but a small section of our country, owing to the absence of any improvements by which the economical transportation of this heavy article can be effected.

From DeBow's Commercial Review.

ART. VII.—PROGRESS OF SOUTHERN INDUSTRY.

GOVERNOR HAMMOND'S ADDRESS BEFORE THE SOUTH CAROLINA INSTITUTE, 1850.

PROSPECTS OF THE COTTON INTEREST—POSITION OF SOUTH CAROLINA—INFLUENCE OF MECHANIC ARTS AND MANUFACTURES—WHAT THE SOUTH IS CAPABLE OF IN COTTON MANUFACTURES—LABOR AT THE SOUTH—FACILITIES FOR STEAM AND WATER POWER—EMPLOYMENT FOR THE POORER CLASSES, ETC.

The following Address, though designed for South Carolina, contains many important truths, the observance of which will be found profitable to the people of every part of our common country. With conceptions at once bold, comprehensive and just, the author has exposed the short-sighted and ruinous policy so long pursued by the Southern States; and looking to the future, has, in our opinion, indicated the true road to wealth and social improvement, in that region.

We rejoice, that the great minds of the South have at length discovered the causes which have been so detrimental to southern prosperity; for surely, no other people claiming to be civilized, ever adopted a system of private and political economy more absurd, and certainly calculated to result in utter ruin: nor have we known any so slow to discover and acknowledge their errors. When, by an increase of production, the price of their great staple declined, and their lands became exhausted by injudicious husbandry, they attributed their depreciated profits and want of prosperity, to the policy of the General Government. In 1832, they succeeded in modifying the policy of which they complained; but instead of improving their condition this modification seemed to have accelerated their downward tendency; for it was shown by the census of 1840, that the population of Virginia and the Carolinas had only increased a fraction over two per cent. in ten years, which was equivalent to a loss of about thirty-one per cent. It was scarcely possible that, a lesson replete with so much instruction should be wholly disregarded by an intelligent people; but their attachments to rural pursuits—their prejudices against mechanics and manufacturers, and perhaps, more than all, their pride of opinion, could not be obliterated in a day; and hence the work of reform and improvement was left to the rising generation and the few who had not committed themselves in favor of the ancient policy.

Notwithstanding these prejudices, however, a change did begin to take place in the economy of the country; and when we examine the social elements which have existed in the South during the last ten years, we regard the progress that has been made in the establishment of manufactures, as affording the most satisfactory evidence that the time is near at hand when the cotton-growing States will spin and weave much the greater portion of their crops. This, will produce important changes in the social and commercial relations of every part of the Union—it will tend to elevate the condition of the non-slaveholders of the South; and, by increasing its products and permanent wealth, neutralise the effects of the commercial and money power of the eastern States; while it will open the natural channels of Western commerce,, and unite the upper and lower valleys of the Mississippi in one great system.

We commend the Address of Governor Hammond to the careful perusal of our Western readers. EDITORS.

The Institute, whose first annual exhibition is about to be opened, is something new in South Carolina. If it succeeds in its purposes, a new era in our history will be dated from this anniversary. Hitherto our State has been as purely agricultural as a civilized community can ever be ; and for the last sixty years our labor has been chiefly devoted to the production of one market crop. The value of this agricultural staple has been for many years gradually declining, and for the last seven or eight has not afforded to our planters an average net income exceeding four and a half per cent. per annum, on their capital. Within the last few months, prices have somewhat rallied, but there is not the slightest ground on which to rest a hope, that they will ever hereafter, for any series of years, average higher than they have done since 1840. On the contrary, it is inevitable that they must fall rather lower. The consumption of cotton, even at late average prices, cannot keep pace with our increasing capacity to produce it; and the article may, therefore, be said to have fairly passed that first stage of all new commercial staples, in which prices are regulated wholly by demand and supply, and to have reached that, in which, like gold and silver, its value, occasionally and temporarily affected by demand and supply, will, in the main, be estimated by the cost of production. Now, on lands that enable the planter to produce an average crop of two thousand pounds of ginned cotton, for each full hand, or for every thousand dollars of capital permanently invested, he may realise seven per cent. per annum, on his capital, at a net price of five cents per pound, or five and a half to six cents in our southern ports. There is an abundance of land in the South and Southwest, on which, unless the seasons change materially, or the worm becomes an annual visitor, all the cotton which the world will consume for many generations to

come, may be grown at this rate. We have ample slave labor to cultivate it; and the result is inevitable, that the average of prices must soon settle permanently about this point.

If these views are correct, what are we to do in South Carolina? But a small portion of the land we now cultivate, will produce two thousand pounds of ginned cotton to the hand. It is thought that our average production cannot exceed twelve hundred pounds, and that a great many planters do not grow over one thousand pounds to the hand. A thousand pounds at five cents net, will yield about two per cent., in cash, on the capital invested; and twelve hundred pounds, but three per cent., after paying current plantation expenses. At such rates of income, our State must soon become utterly impoverished, and of consequence wholly degraded. Depopulation, to the utmost possible extent, must take place rapidly. Our slaves will go first, and that institution from which we have heretofore reaped the greatest benefits, will be swept away; for history, as well as common sense assures us, beyond all chance of doubt, that whenever slavery ceases to be profitable, it must cease to exist.

These are not paper calculations, or the gloomy speculation of a brooding fancy. They are illustrated and sustained by facts, current facts of our own day, within the knowledge of every one of us. The process of impoverishment has been visibly and palpably going on, step by step, with the decline in the price of cotton. It is well known, that, for the last twenty years, floating capital to the amount of five hundred thousand dollars per annum, on the average, has left this city and gone out of South Carolina seeking and finding more profitable investments than were to be found here. But our most fatal loss, which exemplifies the decline of our agriculture, and the decay of our slave system, has been owing to emigration. The natural increase of all the slaves in the South, since the prohibition of the African slave trade, has been thirty per cent. for every ten years. From 1810 to 1820, the increase in South Carolina was a fraction above that rate. From 1820 to 1830, it was a fraction below it. But from 1830 to 1840, the increa e was less than seven per cent. in ten years; and the census revealed the painfnl and ominous fact, that the number of slaves in South Carolina was eighty-three thousand less than it should have been. No war, pestilence, or famine had visited our land. No change of climate, or of management, had checked the natural increase of this class of our population. There can be no reasonable doubt, that the ratio of its increase had been as fully maintained here as elsewhere. But the fact is, that, notwithstanding the comparatively high average price of cotton, from 1830 to 1840, these slaves had been carried off by their owners, at the rate of eight thousand

three hundred per annum, from a soil producing to the hand twelve hundred pounds of cotton, on the average, to one that yielded eighteen hundred pounds. And there is every reason to apprehend, that the census of next year will show that the whole increase of the last decade, which must amount to one hundred thousand, has been swept off by the still swelling tide of emigration.

Under these circumstances, the question may well be asked again, what are we to do in South Carolina? for it is but too obvious that something must be done, and done promptly, to arrest our downward career. To discuss this question fully, in all its bearings, and give a satisfactory answer, would consume more time than can be allowed on this occasion; but I trust its importance will be my excuse, if I trespass by a somewhat elaborate examination of some of its essential features.

The first remedy for our decaying prosperity, which naturally suggests itself, is the improvement of our agricultural system; and of late years a great deal has been said upon this subject. That it is susceptible of great improvement, is very clear; but it is equally and lamentably true, that little or nothing has as yet been done. It must be owned, that neither our agricultural societies, nor our agricultural essays, have effected any thing worth speaking of. And it does seem, that while the fertile regions of the Southwest are open to the cotton planters, it is vain to expect them to embark, to any extent, in improvements which are expensive, difficult, or hazardous. Such improvements are never made, but by a prosperous people, full of enterprise, and abounding in capital, like the English—or a people pent up within narrow limits, like the Dutch. Our cotton region is too broad, and our southern people too homogeneous for metes and bounds, to enforce the necessity of improving any particular locality; and our agriculture is now too poorly compensated to attract superfluous capital, or stimulate to enterprise. It is clear that capital, enterprise, some new element of prosperity and hope, must be brought in among us, from some yet untried or unexhausted resource, before any fresh and uncommon energy can be excited into action, in our agricultural pursuits. In fact, if prices had not gone down and our lands had not worn out, it may be said with great truth, that we have too long devoted ourselves to one pursuit to follow it exclusively much longer with due success in all those particulars which constitute a highly prosperous and highly civilized community.

It is a common observation that no man of one idea, no matter how great his talent and his perseverance, ever can succeed. For both human affairs and the works of nature are complex, exhibiting everywhere an infinite variety of mutual relations and dependencies, many of which must be compre-

hended and embraced in searching after truth, which is the essential basis of all real success. So if, guided by the light of history, we look back over the long track of time, we shall find that no nation devoted exclusively to one pursuit, has been prosperous or powerful for any extended period. Even the warlike Spartans zealously promoted agriculture. And Rome began to decline from the moment that she ceased to draw her soldiers and her generals from her fields and vineyards. But a people wholly agricultural have ever been, above all others, in all ages, the victims of rapacious tyrants, grinding them down, in ancient times, by force of arms—in modern, by cunning laws. The well known fact suggests the obvious reason, and the reason illustrates our present condition and apparent prospects. The mere wants of man are few and limited. The labor of one can supply all that the earth can yield for the support of ten. If all labor, there is useless superabundance. If few labor there is corrupting sloth. And if advancing civilization introduces new wants, and the elegancies and luxuries, as well as the necessaries of life, are to be obtained, the products of agriculture are the least profitable of all articles to barter. Besides that most nations strenuously endeavor to supply them from their their own soil, they are usually so bulky and so liable to injury, that they can seldom be transported far, and never, but at great expense. It is only when an agricultural people are blessed with some peculiar staple, of prime importance, nowhere else produced so cheaply, that they can obtain, habitually, a fair compensation by exporting it. But in the present state of the world, when science and industry, backed by accumulated capital, are testing the capacity of every clime and soil on the globe, and the free and cheap communication which is now growing up between all the ends of the earth, enables wealth and enterprise to concentrate rapidly on every favored spot, no such monopoly can be long enjoyed if sufficiently valuable to attract the cupidity of man. South Carolina and Georgia were, for some years, almost the only cultivators of cotton in America. As late as 1820, these two States grew more than half the whole crop of the Union. They now produce about one-fifth of ti. Such is the history of every agricultural monopoly in modern times.

But we may safely go further and assert, that even when a people possess a permanent and exclusive monopoly of a valuable agricultural staple, for which there is a regular, extensive and profitable foreign demand, if they limit their industrial pursuits to this single one, they cannot become great and powerful. Nay, they cannot now attain the front rank of nations, if they also pursue, as we do, most of the other branches of agriculture, and maintain, as we do not, an independent government of their own, and exercise the power of making war

and peace. The types of man have been infinitely varied by his wise Creator. Our minds are as diverse as our forms and features. The tastes, the talents, and the physical capacities with which we are endowed, are as widely different, and as strongly marked for their appropriate pursuits, as those pursuits have been diversified by Providence. War and public affairs call into action a large proportion of the highest qualities of man, and these, sustained by a simple husbandry, did, in ancient times, make some nations powerful and prosperous. But war is no longer profitable. National pillage is at an end, and territorial aggrandizement, a doubtful benefit at best, is both uncertain in its tenure and costly to maintain. Now, and henceforth, national grandeur to be real and lasting, must be based upon the arts of peace. And in these noble arts, the competition of nations has become so keen and persevering, that every one must develop, to the full extent, its natural advantages, and keep in constant play each and all of the natural endowments, of each and all its citizens, or it will fall rapidly behind in the arduous but steady march of progress. The soils and climates of Italy, Spain and the low countries, are as prolific, and the native genius of their people is doubtless equal to what it was in the days of Augustus, Charles the Fifth and Van Tromp. Yet they have sunk from the highest almost to the lowest point in the scale of nations. But their pursuits are no longer diversified as they once were. Their ships have been swept from the seas—their armies from the land. Their manufactures have been superceded, and commerce has deserted their ports; while they have introduced no new industrial avocations to supply their losses. All the endowments of the whole people being no longer taxed to full and wholesome action, they have languished in idleness, and national decay has, of necessity, followed. So with us. Our agriculture, though it might embrace a wide range in such a climate as ours, and furnish us with highly compensating exports, cannot, even with the assistance of public affairs, absorb all the genius, and draw out all the energies, of our people. The infinite variety of gifts which it has pleased God to bestow on man, must be stimulated into useful action by an equal variety of adequate rewards. It is to the never-ceasing demands of advancing civilization, in all its stages, for new arts, new comforts, new luxuries, more knowledge and wider intercourse of men with one another, that we owe all the discoveries and inventions which have ameliorated and elevated the condition of humanity. And every new conception, every new combination of pursuits, industrial and intellectual, which has expanded the genius, and augmented the power of man and nations of men, has rendered it more and more impossible for an individual of one idea, or a people of one occupation, to attain prosperity and influence.

Since, then, even a flourishing agriculture could not of itself, make us permanently rich or great, the greatest improvements that could be made in our present decaying system would be but a partial and insufficient remedy for the evils under which we labor. We must take a wider range, and introduce additional pursuits, that will enlist a broader interest, that will absorb all our redundant capital, and awaken all the intellect and energy now dormant in our State. On this occasion, however, we will confine our discussion to new industrial pursuits. If we look around us we shall see, that those nations only are powerful and wealthy, which, in addition to agriculture, devote themselves to commerce and manufactures; and that their wealth and strength are nearly in exact proportion to the extent to which they succeed. The principle of the Trinity, perfected in the Deity, seems to pervade all the works of nature and the affairs of man. Time divides itself into three parts—three lines are necessary to inclose space—a proper government must be distributed among three fundamental departments, and the industrial system of the people must, if it would flourish, embrace agriculture, manufactures and commerce, and cherish each in just proportion. Commerce, experience shows us, is the hand-maid of manufactures. Agriculture does not create it, as our own example proves, for we have literally none we may call our own. With eight millions of agricultural exports, South Carolina has scarcely a ship, or a sailor, afloat upon the seas. The Institute, whose anniversary we have met to celebrate, was founded, in part, for the purpose of assisting to lift the mechanic arts from the low condition they have hitherto occupied in South Carolina and the South, and to stimulate our people to avail themselves of the manufacturing and commercial resources they possess. These resources are little known and less appreciated, but it is demonstrable that our southern States possess natural advantages, which enable them to compete successfully with any other, in manufacturing the principle articles now required for the necessities, the comfort and luxury of man. While, with our abundant materials for ship-building, our noble bays and rivers, and our shore line of twenty thousand miles of sea-coast, we have only to make the attempt, to obtain, beyond rivalry, the entire command, of at least our own commerce. In the distribution of these natural advantages, the share which has fallen to South Carolina, is not inferior to that of any of her sister States. And the present stagnant and retrogading condition of our uncompensated industry, loudly appeals to us to make an effort to secure the full enjoyment of them.

But there are difficulties, serious difficulties to be overcome, ere this can be effected—and, strange to say, these difficulties are almost wholly of a moral character. There is no want of

genius, or energy, or skill, or, as yet, even of capital, in South Carolina. We have all these, perhaps, in full proportion to our natural advantages. But ignorance and prejudice are to be encountered—petty interests, false reasoning, unsound calculation, and perhaps, above all, certain traditional habits of thought and action. The ancient and illustrious calling of agriculture, which, while it cherishes and promotes a generous hospitality, a high and perfect courtesy, a lofty spirit of independence, and uncalculating love of country, and all the nobler virtues and heroic traits of man, is apt to engender a haughty contempt of all mechanic arts, as uncreative in their nature and entirely devoted to petty details, which cramp the genius and character, and are wholly inconsistent with those grander aspirations which make the capacious intellect and exalted soul. The agriculturist, it is said, is the sole producer—the mechanic only shapes and changes—commerce simply transfers. These distinctions are only verbal—mere words without any philosophical or rational meaning. God alone creates. He provides the agriculturist with his mighty machine, the earth, and his all powerful agents, air, water, heat. Operating with these, the cultivator changes a seed into a plant, with leaves, blossom, bolls and cotton. The mechanic invents, almost creates his own machine, and by the aid of science, decomposing the very elements, he compels their energies, long, cunningly hid, to perform the task he sets them in perfect accordance with his will. The agriculturist has converted seed into cotton of little value as it passes from his hands. The mechanic converts it into cloth, fit for immediate and indispensible use; but first he has converted wood and iron into machinery, that can perform the labor of a thousand men; he has turned water into steam, to give it life, and has spun from the produce of a single seed, a thread more than a hundred and sixty miles in length. Which is the most wonderful work? Which requires the most comprehensive genius? Which is the nearest approach to the creative power? Whoever, by the application of capital, industry or skill, adds value to any article, is, to that extent, undoubtedly a producer. The merchant who transports the cloth from Charleston to California, and thereby enhances its value, is a producer, as well as the manufacturer who has made cloth from cotton, and the planter who has made cotton from seed.

It is true, as charged, that the mechanic arts deal extensively in minute details. In the construction of machinery it is necessary that its smallest parts should be as perfectly adapted as its largest, to the end in view; and the nicest care is necessary in keeping it in operation. And so throughout the whole mechanic range. Thread by thread the cloth is woven. The smith's work is wrought blow by blow. The carpenter removes

a shaving at a time. The ship grows as the spikes are driven. But the same attention to detail is requisite in every other avocation, in every line of business, in every branch of science, in every department, public and private, of human affairs, and the neglect of it is every where attended with the same utter failure of valuable results. Of all the causes which have combined to impair the agriculture of South Carolina, the most injurious, perhaps, is the habitual want of personal attention to details by the planters themselves, and the impossibility of procuring subordinate agents, who will bestow that thorough and systematic care on small matters, which is absolutely indispensible to successful husbandry.

It is certain that many of the most renowned men and nations of antiquity, looked upon manufactures, trade, commerce and all the mechanic arts with aversion and contempt. The citizens of Sparta were prohibited from engaging in them. Aristotle denounced them. Plato excluded them as far as possible from his republic. The Greeks and the Romans left them to foreigners and slaves. Cicero was disgusted with the idea "that the same people should become, at once, the lords and factors of the universe." France, in latter times, forbade her noblemen to engage in trade, and even in the last century, as great a philosopher as Montesquieu, thought, that England had impaired her greatness, by permitting her noblemen to do it. Thus this prejudice and fallacy is of ancient date and illustrious descent. Yet none could be more absurd, more false, more fatal to all who have adhered to it, individually or nationally, in modern times. Modern civilization took its rise in Italy, and the first clear dawn reveals to us Venice and Genoa, commercial and manufacturing cities, at the opposite outlets of the fertile plains of Lombardy, leading the van of progress. The first established era of refinement, is still known as the age of the Medicis—the merchant princes of Florence. The commercial and manufacturing league of the Hanse Towns next civilized the north of Europe, and from them it was, that England learned those arts of agriculture, manufactures and commerce, which have made her the most powerful nation that ever figured on the globe, and her people, truly and emphatically, and grandly, too, the "lords and factors of the universe."

Shall we, following the false lights of other ages, or the silly impulses of ignorant prejudice, disdain a career as great and glorious as that of England? Or shall we, individually, shrink from a strict and faithful attention to details, in all our pursuits, from the preposterous belief, that such a course is inconsistent with greatness of intellect and magnanimity of soul? Bacon said, with profound truth, that "he that cannot contract the sight of the mind, as well as disperse and dilate it, wanteth a great faculty." The truly great man contracts and expands

his views with equal facility, and sweeps, with the same ease, the narrow defiles of detail and the broad fields of generalization. Cæsar, it is said, could call by name every soldier in his army. Charlemagne, whose achievements made the epoch commonly recognized as separating modern from ancient history, took care to have the superfluous eggs and garden vegetables of his private estates sent to market. Alfred, the founder of the British monarchy, translated the fables of Æsop, and wrote others himself. Napoleon won his mighty battles by calculating steps and counting minutes. Those overwhelming armies with which he crushed, so often, the combined powers of continental Europe, were concentrated on a given spot, at a given hour, by orders issued months before to many corps separated by hundreds of leagues, in which not only the precise route of each was pointed out, but their daily marches, their halts, their rendezvous, the obstacles they would encounter, and the movements by which they were to be overcome, were all accurately and minutely designated. Can we then say, that it is only narrow minds and dull spirits that stoop to investigate and carry out details? The idea is ridiculous.

It is also said, that where manufactures and commerce flourish, morals are corrupted and free institutions do not prosper. It is undoubtedly true, that when men congregate in cities and factories, the vices of our nature are more fully displayed, while the purest morals are fostered by rural life.—But, on the other hand, the compensations of associations are great. It develops genius, stimulates enterprise, and rewards every degree of merit. It is not true that these pursuits are hostile to political freedom. The truth is the reverse. Honest husbandmen, scattered far and wide over the surface of the country, are slow to suspect, and still slower to combine in opposing, schemes of usurpation. A steady loyalty and an earnest aversion to change are their invariable characteristics. Merchants and manufacturers, next to lawyers, have always been the first to "snuff tyranny in the tainted breeze," and foremost in resisting it. The commercial and manufacturing people of the North, in these States, would not bear, for a day, the aggressions on their rights, to which we of the South have been for years, habitually submitting. The first battles for popular liberty, in modern times, were fought in Holland and Flanders; and the indomitable, free spirit of the sturdy tradesman and artisans of Ghent and Bruges will ever be renowned in history.

But it is strenuously contended that the introduction of manufacturing in the South would undermine our free-trade principles, and destroy the last hope of the great agricultural interest. It is susceptible of demonstration, that the consequences would necessarily be precisely the reverse. The

manufacturing people of the North desire a high tariff for no other purpose but to compel the non-manufacturing people of the South to buy from them, in preference to foreigners. If the South manufactures for itself, the game is completely blocked. We will, of course, use the productions of our own looms and work-shops, in preference to any others; and the North will then clamor, as the English manufacturers are now clamoring, for entire free-trade, that they may exchange their industrial products, on the most favorable terms, with foreign nations.—This result is as inevitable as it is obvious.

While it is the object of this Institute to promote all the mechanic arts, and every branch of manufactures, every one is aware, that the advantages we possess for manufacturing cotton are so superior, that far the greater portion of the capital and enterprise that may be embarked in manufactures, will be absorbed in this branch, until it reaches its maximum production. By establishing this manufacture, we shall lay the foundation of many others—in fact, of all others which we can profitably carry on. All these manufactures, and the entire range of mechanic arts, pressingly demand, and are wholly entitled to, the utmost consideration and encouragement from the South; but, on account of its transcendent importance, and because we are now nearly, if not quite, prepared to engage in it extensively, I shall confine my observations almost exclusively to the manufacture of cotton, and examine, so far as time allows, its prospects and bearings on State and individual interests.—Already the South, through the almost unnoticed enterprise of a few of her citizens, more than supplies her own consumption of course cotton, and ships both yarn and cloths, with fair profit, to northern markets. Yet the political influence of the manufacturers of the South is nothing. It cannot send a single representative to Congress—perhaps not even to a State legislature. To augment that influence to a point that would make it felt, manufacturing must be so extended that a foreign market would be indispensable; for the home market, now nearly supplied, would soon be glutted, and the moment a producer goes into the foreign market, he hoists the banner of free-trade. If our Southern manufacturers stop where they now are, content with supplying home consumption, they will desire a high tariff; but, if they aspire to competition with the world, they will contend for the lowest duties upon all importations. This is exemplified, not only by the present state of things in England, but by the fact that our northern manufacturers, now wrestling with the British in China and Brazil, are violently opposed to any duty on tea and coffee, for which they exchange, in those countries, their cotton cloths. The heavy expenses of the British government compel it to tax these articles. This gives our manufacturers a great advantage, and shows the

value, even in our foreign intercourse, of a cheap government at home.

But the great question is, can we compete with other nations? Can we, of the South, manufacture cotton on such terms as to enable us to triumph over the immense capital, the far-famed cheap labor and practiced skill of the great nations who are now so far in advance of us in this branch of industry. I do not speak of the northern States, because, in the very first effort, we have driven them from our markets, and have already commenced the contest with them for their own, in the only class of goods we have yet attempted. It is clear they cannot stand a moment in our way, when we have once fairly started for the prize.

There is a small amount of cotton manufactured into the finest stuffs, by the hand labor of the most wretched and ill-compensated operatives in the world. For this we will not contend, since the paupers of Europe have scarcely yet wrested it from the starving Hindoos. Skill, capital, cheapness of labor, of raw material, of buildings, machinery, motive power and transportation, combined with fitness of climate and security of property, constitute the elements of cheap and profitable manufacturing. All these we must consider in estimating our ability to compete with others in supplying cotton goods for the great markets of the world.

As regards skill, it is a mistake to suppose, that, in manufacturing cotton by machinery, any great degree is necessary in the operative. In a few months, an intelligent youth may learn all that is requisite in most departments; and, in a few years, he may perfect himself in the whole art. We need not go beyond the limits of our own State—scarcely of this city—to have experimental proof of this. But skill belongs to capital. In six months, with sufficient funds, we may draw from any and every quarter of Europe and the North, on reasonable terms, the full amount and precise kind of skill we may desire, with as much certainty as we could bring, by order, a cask of wine, or a bale of woolens. And capitol follows profits. In the present age, wherever on the globe it can be practically and satisfactorily demonstrated, that ample and secure returns are to be obtained from its investment, thither capital will soon flow, and skill be found to manage it. If it can be shown that more can be made by cotton factories in the South than elsewhere, and that property is secure with us, it would be vain to attempt to prevent the concentration here of capital for the purpose, unless the laws absolutely forbid the erection of them. We have all seen what an enormous amount of capital has been invested in cotton planting, within the last thirty years, in consequence of its being thought highly profitable. Not less than $500,000,000 have been so invested, in that period, notwithstand-

ing the most vigorous measures have been openly made during nearly the whole of it, from various and powerful quarters, not merely to make insecure the planter's profit, but to annihilate his property and desolate his country. But heretofore, under equally formidable circumstances, the profits from manufacturing have been far greater than from planting cotton, and the personal superintendence of the capital far less laborious. In fact, this manufacture cannot fail, wherever it can be experimentally shown that it may be carried on with the greatest success, to attract capital, in preference to all others; for it has hitherto afforded, and still affords, the largest returns on its investments of any other permanent industrial pursuit the world has ever known. It is well known that a great proportion of the largest fortunes amassed in England, in the last seventy years of unparalleled accumulation, has been made by cotton manufactures. So numerous and influential has this successful class become, that they are familiarly distinguished there by a distinct and appropriate name: they are called "cotton lords." It is understood, that thirty-three and one-third per cent. is not a very uncommon profit on their capital. This is the reason, and a sufficient one, that the consumption of cotton in England augmented from 100,000,000 lbs. in 1816, at the commencement of peace, to 600,000,000 in 1846, being an increase of six-fold in thirty years. For the same reason, the consumption in the factories of the United States increased, during the same period, from some 32,000,000 lbs. to above 190,000,000 lbs., being about the same proportion. Since 1846, after the reduction of duties by the act of that year, the increase of factory consumption has been beyond all precedent. It was, last year, 45,000,000 lbs. greater than the year before; and for the first six months of this year, the ratio of increase was still larger. It declined during the last six months, in consequence of the temporary high price of cotton. These facts show, not only the immense profits derived from manufacturing cotton, but they prove that they have been as great in our northern States as in England, since the factory consumption has increased in both with an extraordinary coincidence of equal ratio. Unless, indeed, our northern capitalists are content with less profit than those of England, which will not be readily believed. What their precise gains have been, we have no certain data for estimating. They have always been seeking to enhance them by government protection, and, according to their own statements, have been carrying on a ruinous business. Yet they have amassed sufficient wealth to ape, at great expense, the style of English grandees, and have won for themselves a title also—that of "lords of the loom and spinning jenny"—while manufacturing towns have been springing up at the North, and growing off, as if by magic, into cities.

In the South a few factories have fairly got under way. They have had to struggle with the obstacles incident to every new business, and with prejudices, some of which I have glanced at. Experience has not demonstrated what profit can be regularly counted on, though it has been highly encouraging to all who have judiciously embarked in them. It is an important and well ascertained fact, that, during the past year, the comparative increase of factory consumption has been greater in the Southern States than in England, or elsewhere. And it is confidently believed, from the successful experiments which have been made, that, if all our natural advantages for manufacturing cotton were properly developed, under the social and political approbation of the State and of the South, the profits arising from it would be so great, throughout the cotton region, as to attract abundant capital and skill from almost every other quarter.

England is the great dread of all those who turn their attention toward manufacturing. Her capital, her enterprise, her pauper labor, her vast commerce and indomitable energy, have hitherto broken down, or held in check, the cotton manufacturers of the old world. If they have thriven in this country, and kept pace with her in the ratio of increase, it may be said, with great truth and force, that thus far we have done little more than supply our home market with the coarser fabrics, and that a high protective duty has been deemed necessary to enable us to do this; that the only two foreign markets, in which our manufacturers have attempted to contend seriously with her, pay for our goods in articles that enter the United States free of duty, which is equivalent to a direct bounty to our manufacturers, paid by our government; and that it yet remains to be shown, that we can compete with the English in the open and equal markets of the world. I do not believe that our northern manufacturers can ever do it, for reasons which time does not permit me to detail. But it is believed that southern factories may with complete success. Whether they can or not depends, of course—supposing capital and skill abundant—upon which can manufacture cheapest; for, transportation from our ports to foreign markets will be but little, if any thing, more expensive than from her own.

The means of making a comparison between the cost of manufacturing cotton in England and this country, especially in the South, are not abundant, but we have some special facts in point, and a vast body of general ones that may be brought to bear directly on the question. A practical manufacturer, Mr. Montgomery, of Glasgow, who is now in this country, and who had previously written several treatises on cotton spinning, published at Glasgow, in 1840, a work on the comparative advantages of cotton manufacturing in Great

Britain and the United States. It is regarded, I believe, as good authority on both sides of the water. In that work he estimates the cost of a factory in the United States, containing 5,000 spindles and 128 looms, at about $104,000, including the buildings, motive power and all other machinery. The expense of working it a fortnight, he puts down at $1,954. He exhibits the cost of a similar factory in England, which amounted to but $44,000, and the charges per fortnight were only $1,-123. Notwithstanding this striking difference in the cost and charges of the two factories, on summing up and including the value of the goods produced, and the price of the raw material, Mr. Montgomery demonstrates that the final cost of manufacturing cotton is three per cent. in favor of this country. This important conclusion is owing to two items. First, the 128 looms here, turned out 16,000 yards of cloth every fortnight, more than the same number did in Great Britain; and, secondly, the charges on the raw material, from the southern seaport to the northern factory, were only eleven per cent., against twenty-seven and a half per cent., the charges to the British manufacturer. Supposing a southern factory to have been erected at the same cost as a northern, and worked at the same charges, the difference in our favor, inasmuch as the eleven per cent. expenses would be saved to us, would amount to nine* per cent. over the British—an advantage, against which competition could not long be maintained in any equal market. Since Mr. Montgomery wrote, the English have abolished the duty on cotton, which he estimated at four and a half per cent. This placed them nearly on a footing with the North, but still left six per cent. in favor of the South. Since then, they have increased their speed in England, but it has been by an increased outlay for power. If they have reduced the cost of manufacturing, it has been by improvement in machinery, of which it is in our power to avail ourselves almost immediately. But in this country, where the prices of numerous items used in a cotton factory have not yet, by any means, reached the minimum, the cost and charges of such an establishment as Mr. Montgomery describes, have fallen largely since 1840. According to Leonard's Principia, published last year, a factory running 5,000 spindles and 140 looms, may be put up at the North now, twenty-five per cent. cheaper than Mr. Montgomery's estimate; can be worked at charges twelve and a half per cent. less, and will turn out ten per cent. more cloth. In addition to this, the average price of cotton has, for some years, been about half the price at which Mr. Montgomery's estimate was made, while charges have fallen very little, if any, and cannot now amount to less than an average of thirty-three and a half per cent., to the British manufacturer, not-

*Query.—14 1-2 per cent.—Editors.

withstanding the abolition of the duty. These facts seem to prove, that competition with England, in this line of manufactures, is not likely to turn out near so disastrous, as we have been taught to believe by northern alarmists, deeply interested to spread such opinions in this country. They give us also some idea of the causes which have led to so rapid an increase latterly, in the consumption of raw cotton in America. The conclusion might be drawn that even the North may, in the long run, triumph over Great Britain. But our northern brethren have one, to mention only one, fatal and ominous disqualification for carrying such a contest to extremes. With them, owing to their social and political condition, the tendency of wages is constantly to rise. If they are lowered much, or lowered long, the security of property is at an end. They can substitute no labor for that which is virtually entitled to suffrage, and their governments, controlled by those who live by wages, have no power to protect capital against the demands of labor, however unjust. In the South it is wholly different, and so soon as experience shall enable us to handle our own resources skilfully, it will be found, besides, that we have as great advantages over the North and over England, in cheapness of motive power of all kinds, and in facilities for constructing buildings and machinery, as we have in the raw material to be manufactured.

The great item of cost in manufacturing, next to the raw material, is that of labor. And the final result of the great struggle, for the control and enjoyment of the most important industrial pursuit of the world, will probably depend on its comparative cheapness. We are forever told of the "pauper labor" of Europe, and for the reason I have just given, the North is, perhaps, excusable for never having been able to look with composure at this bug-bear. The cheapness of labor is undoubtedly much influenced by density of population, though labor is dearer in Massachusetts, with a population of one hundred, than it is in South Carolina with a population of twenty-two, to the square mile. Ultimately, however, the value of labor must depend on climate and soil. Wherever men can work the most, and under a just and secure government, live at least expense, there, in the long run, labor must be the cheapest. In England, factory labor is now limited by law to sixty hours a week. In our northern States, the average of available weekly labor is estimated at seventy-three and a half hours—in the middle States at seventy five and a half hours, and, the further south we come, the more it is susceptible of increase. Cold, ice and snow, rarely present impediments to working in the cotton region, and the steady heat of our summers is not so prostrating as the short, but frequent and sudden bursts of northern summers. If driven to that necessity, there

is no doubt we can extend our hours of labor beyond any of our rivals. The necessary expenses of the southern laborer, are not near so great as are those of one, in Northern latitudes. He does not require as much, nor as costly clothing, nor as expensive lodgings, nor the same quantity of fuel, nor even an equal amount of food. All the fermented and distilled liquors which, in cold climates, are in some sort necessaries, are here uncalled for and injurious indulgences. Corn bread and bacon, as much as the epicure may sneer at them, with fresh meat only occasionally, and a moderate use of garden vegetables, will, in this region at least, give to the laborer greater strength of muscle and constitution, enable him to undergo more fatigue, and insure him longer life and more enjoyment of it, than any other diet. And these, indeed, with coffee, constitute the habitual food of the great body of the southern people. Thirteen bushels of corn, worth now, even in the Atlantic southern States only about $6 on the average, and one hundred and sixty pounds of bacon, or its equivalent, worth about $9, is an ample yearly allowance for a grown person. Garden vegetables bear no price except in cities. If sugar and coffee be added, $18 or at most $19, will cover the whole necessary annual cost of a full supply of wholesome and palatable food, purchased in the market. Such provisions, and in fact all sound provisions, are dearer in Europe and the North, than they are with us; much dearer than they could be well afforded here, if a steady and sufficient market gave encouragement to their production. It may, indeed, be safely estimated, that each arable acre in the southern States can, with proper culture, maintain a human being, and that we might support within our limits at least 200,000,000, in a far better condition than the operatives and peasantry of Europe now are. Such are our vast prospects for the future. The precise cost of maintaining a laboring man at the North, I have not seen stated. But there are abundant statements in England, not differing materially, for they have scientifically reduced the sustenance of their so much dreaded "pauper labor" to the exact point that will enable it to perform the allotted task. The Edinburgh Review, of 1842, stated that a gallon of flour, per week, just half our allowance of corn, was indispensable, and the average price of that was estimated at eighteen pence. At this rate the British workman pays for bread alone about $18.50 a year, or full as much as will furnish here an ample supply of bread, meat, sugar and coffee. The prices of provisions cannot materially fall in England, for she is largely dependent on foreign supplies, and becoming daily more so, while here, even in South Carolina, with a certain market for corn at twenty-five cents a bushel at the barn, it would be cultivated, in preference to cotton, at six cents in our ports. All these facts show, that while wages

have fallen already in Europe to the lowest possible point, we have a large margin left for their reduction here, should circumstances demand it, and that we have no reason to dread her "pauper labor" in the future. We have only to lift our mechanic arts from their present neglected condition, and learn to avail ourselves of resources which providence has lavished on us, to sweep over every obstacle which such labor may now present, to our immediate enjoyment of the entire monopoly of our own great staple. In fact, the average rate of factory wages in the South is already lower than at the North, and but little higher than it is in England. As soon as operatives can be trained here to take the place of those necessarily brought from a distance, at extra cost, to fill the higher departments of manufacturing establishments, the average of wages, and of all charges for working will, of course, fall considerably. And let it not be forgotten that, as I have already stated, notwithstanding our almost entire want of experience, and all the disadvantages which our few and widely-scattered factories—newly erected among a people wholly unused to such pursuits—having no faith in them—in fact strongly prejudiced against them—must, of course, labor under, they already produce better yarn and cloths, of the qualities attempted, than the northern manufacturers, and are successfully competing with them at their own doors. Mr. Leonard, in the recent work to which I have referred, states the cost of yard-wide No. 14 sheeting at 5.26 cents per yard, at northern factories, with cotton at six cents per pound there. The Graniteville factory, in this State, had not been in operation nine months, before it turned out precisely the same cloth, at 4.84 cents per yard, with cotton at *seven cents a pound here*. And these very goods, made at this establishment, at this rate, have recently taken the *first premium* at the exhibition in Philadelphia. Thus, in addition to sound theoretical reasoning, we have strong practical proofs to lead us to the conviction, that the cotton region is entirely competent to convert the whole cotton crop into goods of all descriptions, at a cost so low as to distance all competition. And the South has only to address herself earnestly to the great work to accomplish it, in a space of time that no one, not intimately acquainted with our people, would deem credible, if suggested now. Great Britain spins two-thirds of the amount of our cotton crop. It is estimated that she employs $200,000,000 in the gigantic operation. On this data we may safely calculate that $400,000,000 invested here would enable us to consume all the raw material we produce. These figures seem enormous, but they should not startle us. Within the last twenty years the South, while she has fallen off in no other branches of industry, has invested $400,000,000 in cotton planting; $50,000,000 in sugar plant-

ing, and not less than $50,000,000 in factories and railroads. Why then should it be questioned that she could, in twenty years more, herself, furnish the capital to manufacture all her cotton.

The immense benefits the South would derive from such a result, are not generally appreciated. Few have the remotest idea of them. Indeed they would be so vast as to defy all previous calculation. "Little more than half a century has elapsed," said Mr. McCullough, in 1833, "since the British cotton manufactory was in its infancy, and it now forms the principal business which is carried on in the country, affording an advantageous field for the accumulation and employment of millions and millions of capital, and of thousands upon thousands of workmen. The skill and genius by which these astonishing results have been achieved, have been one of the main sources of our power; they have contributed, in no common degree, to raise the British nation to the high and conspicuous place she now occupies. Nor is it too much to say, that it was the wealth and energy derived from the cotton manufacture, that bore us triumphantly through the late dreadful contest, at the same time that it gives us strength to sustain burdens that would have crushed our fathers, and could not be supported by any other people." If the manufacture of a portion of the raw material produced by our labor and our soil—and in 1833 she manufactured but a fourth of what we now produce—was of such incalculable advantage to England, what immagination can assign a limit to the power and prosperity we should enjoy, to the heighth of grandeur we might attain, if we manfully put our sickles into the field, and reap for ourselves, by our own industry and enterprise, the whole harvest, which the cotton plant, the inestimable gift from heaven to us, is capable of yielding?

But to bring the subject more nearly home to ourselves, and our immediate interests, let us briefly consider what advantage South Carolina would derive from manufacturing the cotton she produces, and how far she is capable of doing it. The value of the cotton manufactures of Great Britain in 1846, an average year, was, according to the best authority, in round numbers, $205,000,000. The quantity of raw material consumed was about 600,000,000 pounds, and the average price paid by the manufacturer is stated at ten cents per pound, which is equivalent, say to seven cents in this city. Now the average annual production of South Carolina is about 100,000,000 pounds, and if, to make our calculations clear, we assume that the whole of it was, as it might have been, manufactured in Great Britain, in 1846, the value of the fabrics made of our crop was, to the manufacturer there, one-sixth of the whole, or $34,000,000. But we, in South Carolina, obtained only

$7,000,000 for it; intermediate agents got about $3,000,000 and the British manufacturer realized, for his share, $24,000,000. These are not speculations or conjectures. They are recorded facts, which may be verified by reference to unquestionable documents. If we had manufactured our own crop in South Carolina, we should have received, as the reward of our industry, in addition to the $7,000,000 which we did realize, all of the $24,000,000 which fell exclusively to the British manufacturer. If, looking to the future, we estimate the price of cotton in this city at six cents per pound, or $6,000,000 for our whole crop, and reduce the value of it, when converted into goods, to $20,000,00 clear of charges beyond this port, we shall still, by manufacturing it here, increase our net income by the immense sum of $14,000,000 per annum. How would the failing industry of South Carolina recuperate under an increased annual expenditure of $14,000,000 within her limits? How would her cities grow, and new ones spring into existence? How would her marshes be drained, and her river swamps be dyked in, until pestilence was driven from her land, and virgin fields of haustless fertility, conquered for her agriculture? What railroads would be built along her thoroughfares, and what steam ships would be launched upon her waters? How many colleges, and schools, and charities, would be founded and endowed? How would her strength be consolidated at home, and her influence abroad augmented and extended? I am not conjuring up ideal visions to excite the imagination. All these things have been actually done. They have been, in our own times, and under our own eyes, carried out and made legible, living, self-multiplying and giant-growing FACTS in Old England and New England; and they have been mainly accomplished by the incalculable profits which their genius and enterprise have realized on the products of OUR LABOR. But the question will naturally be asked, can South Carolina manufacture 100,000,000 pounds of cotton? Has she, without drawing from abroad, which is not desirable if it can be obviated—has she capital, the motive powers of machinery, and the operatives, that will enable her to do it to advantage? The answer is yes! and the truth of it may be demonstrated in a few words. To manufacture this amount of cotton, $40,000,000 of capital would be an ample and liberal investment, that would cover all contingencies, if made judiciously. Now, for the want of profitable investment, a much larger amount of South Carolina, capital has within the last twenty years, actually left our State, and been lost to us forever. And that, without diminishing our agricultural productions, or foreign exports, which have increased considerably in quantity, if not in value, since 1830. I have already shown, that from 1830 to 1840, upwards of

appropriate sphere, the cultivation of our great staples, under a hot sun and arid miasma, that prostrates the white man, our negro slaves admit of no substitute, and may defy all competition, it is seriously doubted, whether their extensive and permanent employment in manufactures and mechanic arts, is consistent with safe and sound policy. Whenever a slave is made a mechanic, he is more than half freed, and soon becomes, as we too well know, and all history attests, with rare exceptions, the most corrupt and turbulent of his class. Wherever slavery has decayed, the first step in the progress of emancipation, has been the elevation of the slaves to the rank of artisans and soldiers. This is the process through which slavery has receded, as the mechanic arts have advanced; and we have no reason to doubt, that the same causes will produce the same effects here. We have, however, abundant labor of another kind, which, unable at low prices of agricultural produce to compete with slave labor, in that line, languishes for employment; and, as a necessary consequence, is working evil to both our social and political systems. This labor, if not quite so cheap directly, will be found, in the long run, much the cheapest, since those who are capable of it, will, whether idle or employed, inevitably, in one way or another, draw their support from the community. According to the best calculation, which, in the absence of statistic facts, can be made, it is believed, that of the three hundred thousand white inhabitants of South Carolina, there are not less than fifty thousand, whose industry, such as it is, and compensated as it is, is not, in the present condition of things, and does not promise to be hereafter, adequate to procure them, honestly, such a support as every white person in this country is, and feels himself entitled to. And this, next to emigration, is, perhaps, the heaviest of the weights that press upon the springs of our prosperity. Most of these now follow agricultural pursuits, in feeble, yet injurious competition with slave labor. Some, perhaps, not more from inclination, than from the want of encouragement, can scarcely be said to work at all. They obtain a precarious subsistence, by occasional jobs, by hunting, by fishing, sometimes by plundering fields or folds, and too often by what is, in its effects far worse—trading with slaves, and seducing them to plunder for their benefit. If the ancient philosopher had the slightest grounds for saying that it would require the plains of Babylon to support, in idleness, five thousand soldiers and their families, we may infer how enormous a tax it is on our resources, to maintain to the extent we do now, and are likely to have to do, directly and indirectly, our unemployed, or insufficiently employed poor.

From this class of our citizens, thirty-five thousand factory operatives may certainly be drawn, as rapidly as they may be called for, since boys and girls are required, in large proportion,

for this business. Nor will there be any difficulty in obtaining them. Experience has shown that, contrary to general expectation, there exists no serious prejudice against such labor among our native citizens, and that they have been prompt to avail themselves, at moderate wages, of the opportunity it affords of making an honest and comfortable support, and decent provision for the future. The example thus set of continuous and systematic industry, among those to whom it has heretofore been unknown, cannot fail to produce the most beneficial effects, not only on their own class, but upon all the working classes of the State. And, putting aside the immense contribution of manufactures to the general prosperity, it would be one of the greatest benefits that could possibly be conferred on the agriculture of South Carolina, to convert thirty-five thousand of her unemployed or insufficiently compensated population into active and intelligent workmen, buying and paying for the products of her soil, which their families consume.

But it has been suggested, that while factory operatives in the South would constitute a body hostile to our domestic institutions. If any such sentiments could take root among the poorer classes of our native citizens, more danger may be apprehended from them, in the present state of things, with the facilities they now possess and the difficulties they have now to encounter, than if they were brought together in factories, with constant employment and adequate remuneration. It is well known, that the abolitionists of America and Europe are now making the most strenuous efforts to enlist them in their crusade, by encouraging the exclusive use of what is called "free labor cotton," and by inflammatory appeals to their pride and their supposed interests. But all apprehensions from this source are entirely imaginary. The poorest and humblest freeman of the South feels as sensibly, perhaps more sensibly than the wealthiest planter, the barrier which nature, as well as law, has erected between the white and black races, and would scorn as much to submit to the universal degredation which must follow, whenever it is broken down. Besides this, the factory operative could not fail to see here, what one would suppose he must see, however distant from us, that the whole fabric of his own fortunes was based on our slave system, since it is only by slave labor that cotton ever has been, or ever can be, cheaply or extensively produced. Thus, not only from natural sentiment and training, but from convictions of self-interest, greatly strengthened by their new occupation, this class of our citizens might be relied on to sustain, as firmly and faithfully as any other, the social institutions of the South. The fact cannot be denied, that property is more secure in our slave States than it is, at present, in any other part of the world; and

the constant and profitable employment of all classes among us will increase, rather than diminish that security.

There seems, then, to be no impediment whatever to our embarking, at once, in the manufacture of our cotton, and to the full extent of our entire crop, in competition with the world. We have at hand, and within our grasp, all the elements necessary for erecting and carrying on manufacturlng establishments; and we have the raw material on the spot, and at a cost one-third below what our European, and one-eighth below, what our northern rivals are compelled to pay for it; and we have it, also, in far better condition. When it reaches our factories, it will not have been compressed—often not put in bales; it will not have been drenched in rains and rolled in the mud of wharves, nor bleached and rotted by exposure, in its long travels by land and sea. It must, therefore, necessarily, make smoother, stronger and more durable fabrics, of all descriptions, here, than can be made of it elsewhere. And this is fully exemplified by the fact, that both the factory in this city and that at Graniteville have, in the very first year of their operations, carried off the highest prices at the northern exhibitions.

The greatness of a nation mainly depends on the greatness of its natural advantages, and the use it makes of them. The highest gifts of Heaven avail nothing—in fact, if profuse, they become curses—unless judiciously, skillfully and energetically appropriated. The wealth of England, which equals in all that is fabled of the East, and the extent and power of her empire, are all due, in the first instance, chiefly to a wise and vigorous development of her natural resources. Surrounded by the ocean, commerce was evidently a vocation for her. Possessed of mines, in which coal and iron are interstratified, she was invited to manufactures. So soon as she had consolidated union and peace within her borders, she bent herself earnestly to these great pursuits, and devoted to them her genius, industry and enterprise, until, at length, she has circled the globe in her giant arms—shakes every bearing tree on its surface, and draws into her lap the most precious fruits of all its climes. When the steam engine and power loom, the saw gin and slave labor, combined to develop the greatest of all industrial pursuits, she was prepared to take the lead in it at once, and distance every competitor, to the present day; and McCulloch has exaggerated nothing, in estimating the value of this pursuit to her. Great as England was, sixty years ago, when she received the first bale of cotton from our shores, and much as she had done, her power and achievements before bear no comparison with what she has accomplished since, and is able to accomplish now. To speak only of her industrial operations: while all her manufactures have increased, even woolens, linens

and silks, in spite of the substitution of cottons—and her annual production of iron has risen from one hundred thousand to a million of tons—her consumption of raw cotton has grown from some 15,000,000 lbs. to over 600,000,000 lbs. per annum, and the yarn and fabrics she makes of it exceed in value now all her other manufactures together. It is this unparalleled manufacture, thus seized and appropriated, that has finally made her commerce equal to that of all other nations, and London the sole centre of the exchanges of the world; while it has so stimulated her agriculture, that she would now be largely exporting her provisions, if it had not also, notwithstanding her extraordinary wars in every quarter of the globe, and the millions she has lost by emigration, doubled her population in the last fifty years—an event which has never happened within a century before.

Yet this manufacture, whose astonishing results of every kind seem more like enchantment than reality—and in tracing whose actual history, we feel as if we were perusing some story of magic, in which fairies and genii make kings of peasants, and build gorgeous cities of marble and palaces of gold—this wonderful manufacture belongs of right to us. God, in his bounty, has manifestly designed it, and all its attendant benefits, for the people of the cotton-growing region. And he has given us, also, every physical advantage necessary to its full development. We have as much sea shore as England. We command the Gulf, appropriately called the great "Heart of the Ocean," and through which, brushing our shores, in a few years more, almost the whole commerce of the globe will pass. We have coal and iron. We have, besides, immense forests and noble streams without number. We have capital and labor, and the raw material is peculiarly ours. It only remains for us to prove to the world, that we have the courage to claim our own, and the genius and energy to maintain the rights and secure the blessings which a kind Providence has bestowed upon us.

I trust it will not be supposed, that, while thus advocating the encouragement of the mechanic arts, and extensive manufacturing among us, I look upon them in any other light, than as means, not ends; or, that I regard them even as the highest means. A profound philosopher of antiquity has said, that "occupations of utility and necessity ultimately terminate in the pursuit of the beautiful and true." Of this there cannot be a doubt; nor that these occupations exercise a most important influence on the education, character and destiny of every individual and every community of men. Whoever is incapable of faithful and persevering industry, is not capable of anything great. But the proper cultivation of the minds and morals must, in the main, be directed by a higher conception of the useful and the necessary, than would confine them to the mere exer-

cise of any manual or mechanic art. And in training up a truly great people, no effort must be spared to enlarge all the faculties of the intellect, and to purify and elevate every sentiment of the heart. These are the springs and guides which finally sustain and direct all political, social and industrial institutions, and raise a nation to true prosperity and grandeur. But I see no incompatibility between the pursuits I have endeavored to recommend, and the exercise of the highest powers of the human mind, and the cultivation of the noblest sentiments that dignify our nature.

Nor would I be thought, by any means, desirous to see the mechanical and manufacturing spirit and influence prevail over the agricultural, in this State, or in the South. Of all the industrial pursuits of man, there is none so free from vicious contamination, in all its relations and tendencies, as agriculture; none which, if properly conducted, requires closer observation of natural facts, more rigid analysis of causes and effects, or the exercise of higher powers of generalization; none better calculated to impress on man the duties of this life, and lift him to the habitual contemplation of another. Politically, it is nearly impossible that agriculturists can combine and act in concert, but on the basis of truth, of virtue, and of right. If they are slow to reform, they are conservative of all that is pure in every institution. It is, therefore, of the utmost importance in all governments—especially in one so democratic as our own—and in all social systems—especially where, as in ours, so much equality prevails—that the prepondering influence should be agricultural. And with its immense and necessarily permanent superiority in wealth and numbers, there should be no serious apprehension that any other interest can ever override it here. If that should happen, it would prove that the agriculturists were not true to themselves; that they no longer cherished those frugal and industrious habits, and that manly spirit, which are their appropriate characteristics; and that they neglected to cultivate those high and virtuous sentiments, and to imbibe for themselves, and instil into their children, that knowledge and love of knowledge, which constitute, after all, the only genuine sources of real and enduring power.

PACIFIC RAILWAY.

This great work, so creditable to the enterprize of the citizens of St. Louis, may now be regarded as commenced. The first election for directors took place on the 25th day of March, 1850, and resulted in the choice of John O'Fallon, Louis A. Labeaum, Edward Walsh, Daniel D. Page, James H. Lucas, Luther M. Kennett, James E. Yeatman, Thomas Allen and George Collier; and the Board of Directors was subsequently organized by the election of Thomas Allen, Esq., as President.

James P. Kirkwood, Esq., late Superintendent of the New York and Erie Railroad, has been appointed Chief Engineer, and is now actively engaged, with two companies, as we understand, under his direction, in making a survey of the route.

We are informed that the first company commenced the survey on the 24th May; and we learn from the President that the eastern end of the route has been found quite favorable: and, from the facts now ascertained, we are led to believe that the cost of the road will be much less than our first estimates.

We understand that the people along the route, are beginning to be awakened to the importance of the work, and there is reason to believe that, by the time the survey is completed, all the counties along the line will become liberal subscribers. This is the time for the friends of the road to move in the matter. We are informed that the President intends devoting a large portion of his time to this subject, but the field is too extensive for the labors of one individual. We should be pleased to see others come up to his assistance. We deem it important that the country should be thoroughly awakened to the subject during the present year.

THE RAILROAD INTEREST.

From the Railroad Journal.

There has been this year a decided improvement in the earnings of railroad companies over the last, and as a neccessary consequence, an advance in price in this species of property. In all the roads running from this city the advance has been very great, and is based upon the large and constantly increasing receipts. From the abundance of capital in this city seeking investment, any real improvement in railroad property is sure to be seen in the increased price it commands.

The earnings of the Massachusetts roads show a decided increase over last year, notwithstanding the general depression of bussiness in that State.—The prices of stocks gain but slowly, owing to the scarcity of money there. Massachussetts has over invested, and has hardly ready means enough to carry on her ordinary business transactions. Unfortunately all her lead-

ing interests are exceedingly depressed, and at the present time she can accomplish little to extricate herself from her embarrassments. An improvement however is constantly going on and a favorable "turn of times" would soon restore her former prosperity.

All other parts of the country also show a great improvement. Railroads are beginning to recover the position which they once possessed in public estimation, and to be regarded as useful in themselves, and as offering a safe and profitable investment for money. The depression which this kind of property has suffered, has had the good effect to correct much unwise and improvident management, and will be productive of great good in the end.

The increased confidence in railroads is very favorable to those coming into the market for money to complete new works, and will enable such to negotiate their securities at a better rate than could be done a year since.

GEORGIA RAILROAD.

From the Railroad Journal.

The operations of this road for the past year will be seen from the following abstract from the report submitted by the superintendent of transportation, F. C. Arms, Esq.:

TABLE—*Exhibiting the comparative receipts and business of the road, for the years ending March* 31*st*, 1849, *and* 1850.

	Year ending March 31, 1849.	Year ending March 31, 1850.	Increase.
Receipts.			
Passengers - - -	$166,484 04	$189,650 45	$23,166 41
Freight - - - - -	376,957 07	398,006 92	21,049 85
U. S. Mail & rents - -	38,573 48	39,149 65	576 17
Totals - - - -	$582,014 59	$626,807 02	$44,792 43
Expenses.			
Conducting transportation - - - -	$49,895 90	$59,155 00	$10,259 10
Motive power - - -	65,531 14	81,111 89	15,580 75
Maintenance of way -	66,054 99	70,717 82	3,662 83
Maintenance of cars -	14,300 85	17,297 26	2,996 41
Total - - - - - -	$195,782 88	$228,281 97	$32,499 09
Net profits - - -	$386,231 71	$398,525 05	$12,392 34

The increased income, Mr. Arms remarks, has been, from passengers $23,166 41; from freight $21,049 85, and from mail transportation and rents $576 17. Sixty-five thousand four hundred and thirty-eight passengers have been carried in the cars of the regular trains, making an average of 179 per day, both ways—against 106 for each of the two preceding years.

THE

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M. TARVER and T. F. RISK, Editors and Proprietors.

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HUDSON E. BRIDGE. HARRISON P. BRIDGE.

BRIDGE & BROTHER,

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First class	£20,000	£10,000	£5,000	£5,000	£10,000
Second do.	10,000	5,000	2,500	2,500	5,000
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ART. I.—FREE BANKING.

The many individual and social misfortunes which have been attributed to banks of issue and circulation, have produced a prejudice against them so deep-rooted and permanent in the minds of many intelligent men, especially in the western States, that one who advocates banking institutions upon any principle whatsoever, may expect to be regarded by some, as opposed to the best interests of the country. That an injudicious system of banking has been the cause of much evil, may be admitted; but there is, in our opinion, a principle involved in these institutions that is intimately connected with the progress of civilization; and, if wisely applied to the wants of society, they may be made in the West, as they have been in some of the eastern States, most efficient and valuable agents of production, commerce and social progress.

The institution of banking may be regarded as a social development, naturally unfolding itself to meet the wants of man while in a state of transition from a lower to a higher degree in the scale of civilization. We have shown elsewhere,* how utterly impracticable it would have been for mankind to have emerged from a state of barbarism without the use of credit; and so interwoven is this principle of confidence with every condition of society, that even now we should be stayed in our onward march if, neglecting to profit by the wisdom and experience of others, we should do nothing to extend and place upon a better foundation, the individual and social credit of our own community.

A well established credit, whether individual or social, supplies the place of the precious metals; and, in many respects,

*Vide Vol. 1, page 347.

is far more efficient and convenient, as an agent of exchange, than money itself. It is the currency of a higher state of civilization, and must necessarily expand and become more reliable and useful as the intellectual and moral condition of society improves.

Could we trace the history of Banking to its origin, and ascertain the motives of the projectors and subsequent advocates of the institution, we should, doubtless, discover that the idea was suggested by the selfish principle of man's nature; and that a desire to improve the social condition, constituted, at most, but a secondary consideration in the minds of those who have engaged in Banking, from the beginning to the present day. But these facts should not be regarded as proof that Banks, when organised upon safe foundations and conducted with fidelity, are not important agents of commerce, manufactures and internal improvements; or, that they are not calculated to improve the social condition, as well as increase the wealth of communities. Few individuals engage in agriculture, commerce, mining, or manufacturing, with any other view than that of promoting their individual interest; and yet, a state of civilization could scarcely be sustained, if any one of these great pursuits were abandoned. Individual intesest is the main source of human action: and it is the chief office of the statesman, representing the social interest, to guard the latter against the monopolizing principles of the former. This point has not been sufficiently observed in respect to Banking: and hence, in most countries, where Banks have obtained, their social benefits have been greatly modified by the favors and advantages afforded to a few individuals. The first point to be looked to in any system of banking, is, the safety of the bill-holder and depositor: and having established a principle that will protect the community against the evils of a depreciated currency, Banking, like every other pursuit, should, in our opinion, be left open to competition; and every individual be allowed to carry on the business, who would comply with the laws enacted for the protection of the community.

Were this principle established in all the States of the Union, the location of Banks and the amount of capital invested would, everywhere, be adjusted by the wants of the people and by the profits derived from banking operations. And if, as is the case in New York, the Banker should be required to deposit with the comptroller, stocks and mortgages to an amount sufficient to secure the payment of all the bills authorised to be put in circulation, there would be a greater degree of uniformity in the amount of paper in circulation, than has ever been attained under any other system.

The system of Free Banking originated in New York, and seems to be rapidly growing into favor in other States; and

although it may undergo modifications when adopted elsewhere, yet, we predict, that in time, its leading features will be adopted throughout the Union.

The following extracts from the constitution and laws of New York, will enable our readers to comprehend the leading features of the "Free Banking" system in that State: they are taken from a late number of the Railroad Journal, and we publish them in connexion with the remarks of the editor of that valuable work:

"In 1838, an attempt was made in the State of New York to arrange a system of banking, under general laws, open to all parties on equal terms. Who was the father or originator of this new system, we are not able to say, though we have heard its paternity attributed to Silas M. Stilwell, Esq., of this city. Whoever he may have been who gave to the world this new scheme for banking, he now has the satisfaction of witnessing its successful application to all purposes of business, and to find its principles incorporated into the Constitution of the State of New York, as appears by the following extract from the Constitution of the State of New York, adopted 1846:

§ 1. Corporations may be formed under general laws; but shall not be created by special act, except for municipal purposes, and in cases where, in the judgment of the Legislature, the objects of the corporation cannot be obtained under general laws. All general laws and special acts passed pursuant to this section, may be altered from time to time, or repealed.

§ 2. Dues from corporations shall be secured by such individual liability of the corporators and other means as may be prescribed by law.

§ 3. The term corporations, as used in this article, shall be construed to include all associations and joint stock companies having any of the powers or privileges of corporations not possessed by individuals or partnerships. And all corporations shall have the right to sue and shall be subject to be sued in all courts in like cases as natural persons.

§ 4. The Legislature shall have no power to pass any act granting any special charter for banking purposes; but corporations or associations may be formed for such purposes, under general laws.

§ 5. The Legislature shall have no power to pass any law sanctioning in any manner, directly or indirectly, the suspension of specie payments by any person, association or corporation, issuing bank notes of any description.

§ 6. The Legislature shall provide by law for the the registry of all bills or notes issued or put in circulation as money, and shall require ample security for the redemption of the same in specie.

§ 7. The stockholders in every corporation and joint stock association for banking purposes, issuing bank notes or any kind of paper credits to circulate as money, after the first day of January, one thousand eight hundred and fifty, shall be individually responsible to the amount of their respective share or shares of stock in any such corporation or association, for all its debts and liabilities of every kind contracted after the said first day of January, one thousand eight hundred and fifty.

§ 8. In case of the insolvency of any bank or banking association, the bill-holders thereof shall be entitled to preference in payment over all other creditors of such bank or association.

The main feature of this Free Banking law is the increased security required for the redemption of its bills. The principal means held by the chartered banks for the redemption of their circulation are the promissory bills and notes of its customers. If these are convertible into specie on short notice, the banks are regarded in a sound condition. If the paper of its customers proves valueless, to the same extent is the bank weakened.

The New York Banking Law, under the new Constitution requires the security for the redemption of the bills to be placed in the office of the State Comptroller. This security can never be surrendered except on the return of the bills. Under this law, the State takes the security into its own hands. In the case of the old chartered banks, it trusted the security in the hands of its directors for the time being. These directors had only to substitute worthless promises for good ones, and the bills of the bank become worthless, and the bill-holders had no remedy.

Under the old system, the circulation was expanded and contracted at the pleasure of the banks. Under the present system, it is subject to no fluctuation but the laws of trade.

The law of April 18, 1838, section 1, authorised the State Comptroller to prepare bills to be countersigned by the Register.

Section 2 authorised the issuing of these bills on deposite of the stocks of any one of the States or of the United States.

This section was amended in 1840, by substituting the following:

§ 2. Whenever any person or association of persons, formed for the purpose of banking, under the provisions of this act, shall lawfully transfer to the comptroller any portion of the public stock issued or to be issued by this State, such person or association of persons, shall be entitled to receive from the Comptroller an equal amount of such circulating notes of different denominations, registered and countersigned as aforesaid; but such public stock shall in all cases be, or be made

to be, equal to a stock of this State producing five per cent. per annum; and it shall not be lawful for the Comptroller to take such stock at a rate above its par value, nor above its current market value.

Section 3 is as follows:—

Such person or associations of persons are hereby authorised, after having executed and signed such circulating notes in the manner required by law, to make them obligatory promissory notes payable on demand, at the place of business within this State of such person or association, to loan and circulate the same as money, according to the ordinary course of banking business as regulated by the laws and usages of this State.

Sec. 4 is as follows:—

In case the maker or makers of any such circulating note or notes countersigned and registered as aforesaid, shall at any time hereafter, on lawful demand, during the usual hours of business between the hours of ten and three o'clock, at the place where such note or notes is or are payable, fail or refuse to redeem such note in the lawful money of the United States, the holder of such note or notes making such demand may cause the same to be protested for non-payment by a notary public under his seal of office in the usual manner; and the Comptroller, on receiving and filing in his office such protest, shall forthwith give notice in writing to the maker or makers of such note or notes to pay the same; and if he or they shall omit to do so for ten days after such notice, the Comptroller shall immediately thereupon (unless he shall be satisfied that there is a good and legal defence against the payment of such note or notes) give notice in the State paper, that all the circulating notes issued by such person or association will be redeemed out of the trust funds in his hands for that purpose; and the Comptroller shall be required to apply the said trust funds belonging to the maker or makers of such protested notes to the payment *pro rata* of all such circulating notes, whether protested or not, put in circulation by the maker or makers of such protested notes, pursuant to the provisions of this act, and to adopt such measures for the payment of such notes as will, in his opinion, most effectually prevent loss to the holders thereof.

§ 5. The Comptroller may give to any person or association of persons so transferring stock in pursuance of the provisions of this act, powers of attorney to receive interest or dividends thereon, which person or association may receive and apply to their own use; but such powers may be revoked upon such person or association failing to redeem the circulating notes so issued, or whenever in the opinion of the Comptroller, the principal of such stock shall become an insufficient secu-

rity; and the said Comptroller, upon the application of the owner or owners of such transferred stock in trust, may, in his discretion, change or transfer the same for other stocks of the kinds before specified in this act, or may transfer the said stocks, or any part thereof, or the mortgages, or any of them hereinafter mentioned and provided for, upon receiving and cancelling an equal amount of such circulating notes delivered by him to such person or association, in such manner that the circulating notes shall always be secured in full, either by stocks or by stocks and mortgages, as in this act provided.

§ 6. The bills or notes so to be countersigned, and the payment of which shall be so secured by the transfer of public stocks, shall be stamped on their face, "Secured by the pledge of public stocks."

§ 7. Instead of transferring public stocks as aforesaid, to secure the whole amount of such bills or notes, it shall be lawful for such person or association of persons, in case they shall so elect before receiving any of the said bills or notes, to secure the payment of one-half of the whole amount so to be issued, by transferring to the Comptroller bonds and mortgages upon real estate, bearing at least six per cent. interest, of this State, payable annually or semi-annually; in which case all bills or notes issued by the said person or association of persons, shall be stamped on their face, "Secured by pledge of public stocks and real estate."

§ 8. Such mortgages shall be only upon improved, productive, unincumbered lands within this State, worth, independently of any buildings thereon, at least double the amount for which they shall be so mortgaged; and the Comptroller shall prescribe such regulations for ascertaining the title and value of such lands as he may deem necessary; and such mortgages shall be payable within such time as the Comptroller may direct.

The provisions of sections 7 and 8 are modified by the laws of 1848 and 1849, as follows:

LAW OF 1848.

§ 2. The securities which banking associations or individual bankers hereafter to be organised under the provisions of the above recited act, passed April 18, 1838, and the amendments thereto, shall deposit with the Comptroller as security for the redemption of circulating notes issued to them by the said Comptroller, shall be New York State stocks in all cases to be or to be made to be equal to a stock producing six per cent. per annum, and it shall not be lawful for the Comptroller to take such stocks at a rate above its par value; or the securities shall not be less than one-half in such stock, and one-half in bonds and mortgages upon improved, productive, unin-

cumbered lands in this State, exclusive of any buildings thereon, said mortgages bearing an interest of not less than seven per cent. per annum, and to an amount not exceeding two-fifths of the value of said lands.

LAW OF 1849.

§ 1. The stocks which banking associations or individual bankers, now or hereafter to be organised under the provisions of the Act "To authorise the business of Banking," passed April 18, 1838, and the amendments thereto, shall, hereafter, deposit with the Comptroller, shall be New York State stocks, in all cases to be, or to be made to be, equal to stock producing six per cent. per annum, or at least one-half the amount so deposited shall be in stocks of the State of New York, as before mentioned, and not exceeding one-half in stocks of the United States, in all cases to be, or to be made to be, equal to a stock producing an interest of six per cent. per annum; and it shall not be lawful for the Comptroller to take such stocks at a rate above their par value, or above their current market value.

In this number, we give only the main features of the New York system. We find it a matter so full of interest, and have so many inquiries on the subject, that we shall hereafter give full details of the law and the rules and regulations adopted by the Comptroller of the State in perfecting and carrying out the system.

New Jersey is adopting the same policy, and a bill containing similar provisions as the New York law, is now pending before the legislature of that State. A similar movement is going on in Pennsylvania.*

We believe there is not a merchant or business man of this city, who does not concur in the opinion that our present banking law is an improvement upon the old, or the chartered bank system.

The chartered banks pay a tax to the State for their banking privileges, the free banks are exempted from this liability. The chartered banks, many of them, have surrendered their charters for the purpose of adopting the free bank system."

It cannot be doubted, we think, that such a plan is calculated to obviate many of the prominent evils of the old system.

In communities where the banking capital is inadequate to the demand, a system of favoritism invariably obtains: if it be a joint stock company, the corporators and their friends must be served before strangers; and if it be a State institution, the

* We understand that the subject of a general Banking law has recently been under consideration in the Legislature of Connecticut; and, though differing in some of its details, it is similar, in its leading principles, to the New York Free Banking system. EDITORS.

party in power claim its benefits, and control its operations; and thus an unfair advantage is given to one part of the community at the expense of the other. This is a natural vice, inherent in the old system, that can never be eradicated; nor, can it be ameliorated but by increasing the number of institutions. No legislative enactment can change the law of man's nature; and it is absurd to expect, that men acting as bank directors will totally disregard their individual interest, and look alone to the public welfare; or, that individuals who are the especial favorites of banking institutions, will not be tempted to speculate upon the necessities of the less fortunate. Under the new system, banking will be strictly a business operation: the stock will generally be held by a few individuals; and like merchants, or men engaged in any other business, they will look to the profit and safety of each transaction, rather than to the politics of their customers. Besides affording more perfect safety to the bill-holder than any other scheme that has been devised, it is calculated, in our opinion, to prevent the sudden expansions and contractions of paper money incident to our present system; for, by no contrivance or subterfuge can the banker increase his issues beyond the amount of property pledged; and the necessity of keeping his business completely within his control, will continually tend to restrain speculation and over trading.

Believing that a mere glance at the banking system of New York will convince every intelligent mind that, in many respects, it is better adapted to the condition of the people of the United States than any that has yet been tried, we proceed to enquire whether the interest of our own State would be promoted by its introduction here.

We are not unmindful of the fact that many of our intelligent citizens are opposed to banks of issue and circulation in any form whatsoever, in other words, they are opposed to paper money; but their opposition can avail nothing so long as banking is authorised in other States of the Union. Notwithstanding their opinions in regard to this subject—and be the policy of our State whatsoever it may—other States will still encourage banking; and paper money will continue to constitue, as it now does, a large portion of our circulating medium. These are facts of which there can be no reasonable doubt; and hence the question of banking in Missouri, simply resolves itself into one of expediency: it is too late to repudiate the principle; for, as before suggested, banking is a natural development of the present stage of civilization; and will consequently exist in some form, until society shall either retrograde from, or progress far beyond its present condition. Then, what should be our policy, shall we forego all the facilities which banks are calculated to afford, and still be com-

pelled to use the paper money of other States; or, is it better that we encourage and build up a system of our own? Much the larger portion of our circulating medium, as far as we are capable of judging, consists of the paper money of other States; this, usually, passes current in the ordinary transaction of business, but is not receivable in our banks—it will not pay execution debts nor public dues, and is always below par with the brokers. But as long as these foreign bills are allowed to pass in Missouri, they, by an overruling law of commerce, displace or prevent the introduction of an equal amount of the precious metals; and hence, notwithstanding, our opposition to banks at home, we assist in sustaining those of other States, over which we have no control. If we desire to participate in the general prosperity of the age, we must avail ourselves of the means and appliances which it produces. We live in an age of credit—of social combinations, and progress. Credit is the great element of modern commerce: nor, could the manufactories and internal improvements, especially of the Eastern States, have been brought into existence without the agency of an extended and well-organised system of credit. Through the agency of her banking associations, New England has *coined* her credit into money; and, while the people of some of the Southern and Western States have repudiated banks and corporate associations, she, through the instrumentality of her institutions, is continually drawing off the profits of their labor; and it is from the South and West, mainly, that she derives large dividends on her banking, manufacturing and internal improvement investments. Shall we, of the West, blindly continue to contribute to the overgrown wealth—the money power of the Eastern States—and neglecting the development of our own great resources, vainly pursue the phantom of a purely metallic currency—a consummation that can only be attained by the abandonment of the great principles of social progress, and retrograding from our present position in the scale of civilization?

If we review the history and present condition of the several States of the Union, we shall find that those have progressed most rapidly in manufactures and internal improvement, and also, in the acquisition of all that constitutes wealth and comfort, who have given the most uniform and liberal encouragement to banking. It is true that some of the Southern and Western States, acting under the influence of a spirit of speculation, did, some years ago, extend their banking operations beyond the bounds of prudence; and doubtless, much of the ruin and distress that followed the revulsion of 1837, was occasioned by over banking. These banks, however, were not so much the cause, as the effect, of a speculating mania;

and consequently failed, with the speculations which they were designed to aid: and when we consider the spirit of the times in which they sprang into existence — the large amount of capital which they were generally authorised to employ—the almost unrestricted character of their charters, and the want of experience on the part of those who directed their operations—we cannot admit that their failure affords an argument of any weight, against the utility of a well-organised and well-directed banking system.

Massachusetts, possessing a territory equal to about one-tenth of Missouri, has one hundred and twenty-eight banks, with a capital of $37,235,000; and even Rhode Island, within her area of 1,250 square miles, has sixty-two banks, with a capital of about $10,000,000; and yet, the banks in these States have, with slight exceptions, uniformly sustained their credit under all the changes that have occurred since their establishment. And, owing to the fact that the debts due to these institutions, are divided among all the different interests of the State, it can scarcely happen in the ordinary course of events, that any revulsion that may occur would cause a suspension of specie payments; and furthermore, instead of exciting a spirit of speculation, the great number of banks tend rather to suppress it: these institutions are open to all who are worthy of credit; and the punctuality which they require on the part of their customers begets a habit of caution and circumspection well calculated to restrain them from indulging in hazardous speculations.

The Southern and Western policy of creating banks, with the privilege of using a large amount of capital, and, limiting the number to a few in each State, is one of the principal causes of the prejudices which exist against them in this part of the Union: it is this policy that has imparted to them the character of monopolies; and it is only by limiting the amount of capital to a reasonable sum, and opening the way to competition, that banks can be divested of their monopolising qualities.

In Missouri, under our present system, banking is constituted an absolute and unqualified monopoly by the Constitution. No matter what may be the wants of the community, nor, with what degree of partiality the favors of the institution may be dispensed, the capital cannot be enlarged beyond the constitutional limit, nor the number of branches increased.

We have no charges to make against the management of the institution, indeed, as far as our knowledge extends, we believe it is conducted with as much liberality, as, perhaps, any other has ever been that was established on similar principles; but we deprecate the principle of monopoly involved in the constitutional provision by which it was established. Had the

Constitution inhibited the establishment of banks and the circulation of the paper currency issued by other States, such a provision would have been just; and would have afforded the people a fair opportunity of testing the excellency of a metalic currency; and whatever might have been thought of the policy of such a provision, its boldness would have challenged respect. But it would seem that the framers of the Constitution were impressed with the truth that banks were capable of doing evil as well as good; and in their zeal for the interest of their constituents, undertook to do what man has never yet been able to achieve—to separate these inseparable qualities—doubtless, with the design of adopting the good and excluding the evil; but instead of analysing the subject, they divided it into sections, and, unfortunately, the part adopted contained all the evil properties, while the better principles of the institution were so much restricted as to destroy, in a great degree, its usefulness.

We have long regarded the banking provision in our Constitution as unsound in principle, anti-democratic in its tendency, and, calculated to retard the development of our resources: it is unsound and anti-democratic, because it authorises the establishment of one bank and five branches, with a certain amount of capital, which can never be increased; and secures to the corporators a privilege which is expressly denied to all other citizens of the State: it is calculated to retard the development of our resources, because, for the want of more extensive facilities, the establishment of many branches of industry is prevented, and consequently we are compelled to look beyond the borders of the State for many articles of prime necessity, which might be produced at less cost from our own raw material.

In advocating an amendment of the Constitution, however, we would not open the door for joint stock companies or Free Banking, without providing for the safety of the bill-holder: this is the great point to be kept in view; but we are not wedded to any particular mode of effecting this end; if a better system than that adopted by New York can be devised—one better adapted to our peculiar condition, let us have it; but with such exceptions and restraints as we have indicated, the business of banking should be as free to every citizen as commerce or agriculture. We shall then afford our citizens the means of entering into competition with the people of other States upon fair and equal grounds: and enterprise and capital will be attracted hither by the richness and abundance of our natural resources. Missouri has lost its attractions as a new State; and her policy hitherto has not been calculated to invite emigrants to settle within her borders; the older States of the West are leaving her far in the rear, and the

younger are rapidly gaining upon her: these facts, so obvious to every intelligent mind, should incite our citizens to enquire into the causes which have retarded our progress. Surely, these things are not owing to any lack of natural wealth, unfriendliness of climate, or inconvenience of geographical position; for Missourians rejoice in the possession of a fertile soil, immense mineral resources, a climate not less genial, at least, than that of their neighbors, and withal, the State is situated in the centre of the Valley of the Mississippi—the very heart of the Continent. Then where shall we look for the causes that so much retard our progress? We answer, in the selfish and unenlightened policy of our people.

Individually, our people are not less intelligent than those of other States; nor, are they wanting in habits of industry and economy; but, in general, each individual works for himself: the politician studies his individual interest rather than the public welfare: there are no social combinations calculated to achieve any important social object; and yet, in sentiment, perhaps, no people are more progressive; they delight in the enlargement of the area of freedom, but take little interest in the social condition of their own State; they advocate unrestricted commerce with all nations; but embarrass it with all kinds of restraints at home; and when, by experience, they are convinced that their cunningly devised policy will not enrich them, they *progress* beyond the borders of the State rather than acknowledge themselves deceived. These are some of the causes which retard the increase of population and general prosperity of Missouri; and until they shall have been removed or modified, we must continue to occupy our present position in the rear of the Western States.

ART. II.—MINNESOTA.

This recently organised territory is beginning to attract the attention of large numbers of emigrants from Europe, as well as from the Northern and Eastern States of the Union; and when the Indian title shall have been extinguished to some of the more attractive portions of the country, we shall not be surprised if the emigration to Minnesota should exceed even that to Wisconsin and Iowa. It is difficult for the inhabitants of more southern climes to realise the idea that a region so far north as Minnesota, especially on this continent, is susceptible of sustaining a dense population of intelligent and enterprising people; and hence, those of the Southern and Middle States are but just beginning to appreciate the vast influence

which the future population of the North-west is calculated to exert upon the destiny of the great American family.

The severity of the climate in this region, instead of operating as a hindrance to its improvement, constitutes the strongest argument in favor of its future prosperity. The long winters of the north afford much time and opportunity for social intercourse; and the necessity of accomplishing a large amount of labor during summer, naturally leads the inhabitants to form social combinations for the accomplishment of almost every object. Individually, the northern man may be regarded as more selfish than him of the South; but this very selfishness is the source of his social action: it imparts an acuteness of perception scarcely less erring than instinct; and, he comprehends, as by intuition, the great problem that the social and individual interest are one. Add to these social qualities, a physical constitution invigorated by the climate, and who shall assign a limit to the progress of the men of the North, aided by the facilities of transportation and travel which the improvements of a few years will afford them.

Minnesota is supposed to contain about one hundred and sixty-six thousand square miles—an area but little less than that of the States of Ohio, Indiana, Illinois, and Missouri; and though it may not be equal to these States in point of fertility, yet, it is, doubtless, a country of vast agricultural resources, and calculated to sustain an immense population. We have conversed with many intelligent individuals who have traveled in Minnesota, and have been charmed with the accounts which they give of its fertile soil—the peculiarity of its scenery—the beauty of its *mille lacs* (thousand lakes) and the abundance of fish and fowl with which they abound. But lest we should do injustice to the subject by attempting to describe a country we have not seen, we make the following extracts from M. Nicollet:

"The whole country embraced by the Lower St. Peter's and the Undine Region [or Mankato Valley], exceeds any land of the Mississippi above Wisconsin River, as well in the quality and quantity of its timber as the fertility of its soil. The forests of the valley on the right bank are connected by groves and small wooded streams of the adjoining prairies with the forest called Bois-francs; and they extend so far southwest, as to include the lands of the upper waters of the Mankato River.

"The forest trees, as reported to me by Mr. Geyer, are chiefly soft maple, American and red elm, black walnut, the nettle tree, bass wood, red and white ash; the undergrowth, the common hawthorn, prickly ash, high cranberry, red root, grey dogwood, fox grapes, horsebriar and moonseed. Among the herbs are the wild and bristly sarsaparilla, Indian turnip,

the gay orchis, and others; rushes and the flowering ferns are abundant along the low banks of the rivers. The valley prairies are rich in pasture grasses and leguminous and orchideous plants, such as the yellow ladies' slipper, American and tufted vetch, and others. The lowest parts, near the borders of the woods, and those subject to inundations, are filled with the high weeds common to such places—as the ragged cup, tall thistle, great bitter weed, the tuburous sunflower, and others.

"Swamps are frequent, and some of them contain extensive tracts of tamarack pines. Cedars grow intermixed with red birch, on the rocky declivities of the Lower Mankato River. Red and bur oak, with hazel, red root, peterswort, and the wild rose, are the trees and shrubs of the uplands. There are, besides, thickets of poplar-birch, that are frequent in the elevated prairies near the river. The prairies are very luxuriant, and generally somewhat level and depressed; the gum plant and button snakeroot are their most abundant and conspicuous herbs.

"Along the Mississippi, a length of one hundred and eighty miles, from St. Peter's to Crow Wing River, the valley is wide, with river banks of moderate elevation, affording beautiful sites, that contrast remarkably with the bold escarpments exhibited below the Falls of St. Anthony. In this ascent of river, which is full of rapids, it is necessary to have recourse to the pole or the tow-line; and, generally, following the left bank, under good gvidance, and with sufficient hands to stem the current, portages may be avoided. This left bank presents almost a continued level of from ten to twenty feet in elevation, forming a retreating succession of terraces that are delightful to the view. The superincumbent soil is composed mainly of sand, gravel and clay, intermixed with erratic blocks. The sylva consists of white and black oak, white and blue ash, red elm, two or three species of maple, the lime tree, birch, a few hickories and walnuts. The western shore is more generally interspersed with swamps and wood lands, well set with pines, birch, and sometimes with extensive camps of the sugar-maple."

The great plateau dividing the waters of the Mississippi from those of the Missouri, is generally represented as one of surpassing beauty: of this region M. Nicollet says:

"The basin of the Upper Mississippi is separated in a great part of its extent, from that of the Missouri, by an elevated plain, the appearance of which, seen from the valley, of the St. Peter's, or that of the Riviere Jacques, looming, as it were, a distant shore, has suggested for it the name of *coteau des prairies*. Its more appropriate designation would be that of

plateau, which means something more than is conveyed to the mind by the expression, *a plain*.

"Its northern extremity is in latitude 46 o, extending to 43 o; after which, it loses its distinctive elevation above the surrounding plains, and passes into rolling prairies. Its length is about two hundred miles, and its general direction, N. N. W. and S. S. E. Its northern termination (called '*tete du coteau*,' in consequence of its peculiar configuration) is not more than fifteen to twenty miles across; its elevation above the level of the Big Stone Lake is 890 feet; and above the ocean 1,916 ft. Starting from this extremity (that is, the head of the coteau), the surface of the plateau is undulating, forming many dividing ridges, which separate the waters flowing into the St. Peter's and the Mississippi from those of the Missouri.

"Under the forty-fourth degree of latitude the breadth of the coteau is about forty miles, and its mean elevation is here reduced to one thousand four hundred and fifty feet above the sea. Within this space its two slopes are rather abrupt, crowned with verdure, and scolloped by deep ravines thickly shaded with bushes, forming the beds of rivulets that water the adjacent plains. The coteau itself is isolated in the midst of boundless and fertile prairies, extending to the west, to the north, and into the valley of the St. Peter's.

"The plain, at its northern extremity, is a most beautiful tract of land, diversified by hills, dales, woodlands and lakes: the latter abounding in fish. The region of country is probably the most elevated between the Gulf of Mexico and Hudson's Bay. From its summit, proceeding from its eastern to its western limits, grand views are afforded. At its eastern border, particularly, the prospect is magnificent beyond description, extending over the immense green turf that forms the basin of the Red River of the North, the forest-capped summits of the *hauteurs des terres* that surround the sources of the Mississippi, the granite valley of the Upper St. Peter's, and the depressions in which are Lake Travers and the Big Stone Lake.

"The other portions of the coteau, ascending from the lower latitudes, present, pretty much, the same characters. This difference, however, is remarkable: that the woodlands become scarcer, whilst the open prairies increase in extent. It is very rarely, only, that groves are met with, to which the N'dacotahs, or Sioux, have given the name of Tchan Witah, or Wood Islands. When these groves are surrounded by water, they assume some resemblance to oases, and hence I have assigned this name to some of them on my map.

"These oases, possessed of a good soil, well wooded, offering an abundance of game, and waters teeming with fish, offer inducements for permanent settlements. In this region there

are frequent instances of a marsh or lake furnishing waters to different hydrographical basins—a fact observed by the Sioux, and which they express by the compound word of their dialect, *mini-akipan-kaduza*;—from *mini*—water; *akipan*—division, share; and *kaduza*—to flow, to run out."

M. Nicollet gives the following description of some of the principal rivers of this region:

"The St. Peter's River, called by the Sioux Mini-sotah (blear water), and by the Chippeways Ashkibogi (green leaf), rises in a region of lakes at the head of the Coteau des Prairies, and running southeast soon expands into the Big Stone Lake, and farther on, after receiving two considerable streams, the Izuzah and Tipsinah, again forms a small lake (called Qui parle, or Echo Lake), below which the volume of water is again much increased by the addition of other branches—the Intpah and the Manya Wakan, and farther down, by the Pejutah, Zizi, or Yellow Medicine; below which are a series of rapids and falls for thirty or forty miles to the Tchanshayapi or Red Wood, another branch which, starting in immediate contiguity with the sources of Moingonan, and seeking St. Peter's by a not very winding course, falls into it on the right in about 44 deg. 35 min. N. Below this the river is navigable to its mouth—about two hundred and fifty miles. In this part of its course it receives the Waraju, Little Waraju, and Mankata, or Blue Earth, on its right bank, and immediately turning, runs in a right angle to its former course, and receiving a great number of small streams on both sides, and on its left, the Witahantu, of larger size, enters the Mississippi in latitude 44 deg. 50 min., about eight miles below the Falls of St. Anthony, which are in 44 deg. 58 min. 40 sec. The whole length of this course is four hundred and seventy miles.

"The Tchansansan or a Jacques River.—The basin of the River Jacques between the two coteaux, and in the latitude of Otohuoju—about 45 deg. 15 min—may be laid down as having a breadth of eighty miles, sloping gradually down from an elevation of seven hundred to seven hundred and fifty feet. These dimensions, of course, vary in the different parts of the valley; but what I have said will convey some idea of the immense prairie watered by the Tchansansan, which has been deemed by all teavelers to those distant regions perhaps the most beautiful within the territory of the United States.

"I hazard, in conclusion of my remarks on the physical geography of the valley just described, the suggestion that it has been scooped out by some powerful denuding cause, and that its original geological character was such as is now

observed in the Coteau du Missouri and the Coteau des Prairies, by which it is bounded.

"It is only necessary to cast a glance over the map, to form an idea of the importance of Tchansansan river. It takes its rise on the plateau of the Missouri, beyond the parallel of 47° N.; and after pursuing nearly a north-and-south course, empties into the Missouri River below 43°. It is deemed navigable with small hunting canoes for between 500 and 600 miles; but, below Otuhuoju, it will float much larger boats, and there are no other obstacles in its navigation than a few rafts. When we turned away from the river in latitude 46° 27', its breadth was from 80 to 100 feet; and we could discover by the water-marks on its banks, that, in the season of freshets, it widens out here to 100 yards, and south of Otuhuoju to 200 yards. The shores of the river are tolerably well wooded, though only at intervals; the trees consisting principally of elm, ash, burr-oak, poplar and willows. Along those portions which widen into lakes, very eligible situations for farms would be found, and if the Indian traders have hitherto selected positions south of the Otuhuoju, it was doubtless in consequence of its more easy navigation into the Missouri.

"Tchankasndata or Sioux River.—This is the Big, or simply the Sioux River, and is one of the most importance to the country through which it flows. Its Indian name means that it is continuously lined with wood. Its sources are at the head of the Coteau des Prairies, not more than a mile from those of the St. Peter's, and separated only by a low ridge. Its length cannot be less than three hundred and fifty miles; in which distance there are two principal bends—the more southerly and smaller being terminated by a fall, said to be the only obstacle to its entire navigation. From this circumstance the upper part of the river bears another name: the Sioux calling it Watpaipakshan, or Crooked River, and the French, la riviere Croche. It flows through a beautiful and fertile country; amidst which, the Ndacotahs, inhabiting the valley of the St. Peters and Missouri, have always kept up summer establishments on the borders of the adjoining lakes, whilst they hunted the river banks. Buffalo herds are confidently expected to be met with here at all seasons of the year."

We shall close our extracts from M. Nicollet with his observations on the effects produced by the peculiar scenery of this region, on the mind of the traveler*:

*Note.—The foregoing extracts from Nicollet, have been taken from Bradford's "Notes on the Northwest"—a work which contains much valuable information in respect to this great region. Editors.

"To look at a prairie up or down—to ascend one of its undulations—to reach a small plateau (or, as the voyageurs call it, a *prairie planche*), moving from wave to wave over alternate swells and depressions; and finally, to reach the vast interminable low prairie that extends itself in front—be it for hours, days, or weeks, one never tires; pleasurable and exhilirating sensations are always felt—*ennui* is never experienced. Doubtless, there are moments when excessive heat, a want of fresh water, and other privations, remind one that life is toil; but these drawbacks are of short duration. There is almost always a breeze over them. The security that one feels in knowing there are no concealed dangers; so vast is the extent which the eye takes in; no difficulties of road; a far spreading verdure, relieved by a profusion of variously colored flowers; the azure of the sky above, or the tempest that can be seen from its beginning to its end; the beautiful modifications of the changing clouds; the curious looming of objects between earth and sky, taxing the ingenuity of every moment to rectify;—all, everything, is calculeted to excite the perceptions, and keep alive imagination. In the summer season, especially, everything upon the prairies is cheerful, graceful, and animated. The Indians, with herds of deer, antelope, and buffalo, give life and motion to them. It is then they should be visited; and I pity the man whose soul could remain unmoved under such a scene of excitement."

When we reflect that the increase of population in the United States is now, at least, one million per annum, it cannot be considered very extravagant to suppose, that the country included in the bounds of Minnesota will contain a population of 500,000, or perhaps 1,000,000, in the year 1860; unless the settlement of the country should be retarded by difficulties in extinguishing the Indian title.

Looking to the settlement, at an early day, of the vast region of country between the Mississippi and Missouri rivers, it is time that we should begin to enquire into the means of opening the channels of commerce and social intercourse, between the central portion of that country and the Southern States. The great northern line of railroad, with its branches, will doubtless keep pace with the settlement of the country until it reaches the rocky mountains; nor, will it terminate there, unless stopped by insurmountable difficulties; but this line will not supply the wants of the inhabitants of this region; for by the natural laws of commerce, their intercourse must be with the South; and a profitable intercourse with the Southern markets, can only be opened by means of a railway. Let a main trunk line commence on the Missouri river, at the city of St. Charles, and pursue a

northwesterly direction to the valley of the Red River of the North: this, with such branches as the wants of the country may, in time require, will afford a complete and convenient commercial intercourse between the extreme northern and southern States of the Valley of the Mississippi; and in point of importance, as a work of interal improvement, this may be regarded as second to none in the Union—the great Pacific Railway only, excepted. It is not to be expected that a work of such magnitude, located throughout, in a country so recently opened to settlement, would be undertaken upon the faith of private capital alone; but it may be regarded as the true policy of the General Government, as a great landholder—to say nothing of the justice of the measure—to make a liberal appropriation of land to aid in carrying on the work; and if the States of Missouri and Iowa, acting in concert, would incorporate a joint stock company, with the privilege of constructing the road within their respective limits, there is no reason to doubt that the General Government would make an appropriation sufficient in amount to authorise individuals to embark in the enterprise.

We have made these suggestions for the consideration of the citizens of our own State, and more especially for those residing north of the Missouri river, and, trust that they will take sufficient interest in the subject to bring it before the next General Assembly. We can form no opinion in regard to the view the citizens of Iowa will take of this matter; they may have a policy and system of their own which may possibly conflict with the work proposed; but if they are wise, we think, they must see that such an improvement will be of incalculable benefit to their State, although it may not constitute a part of their system. It will be the shortest route by which they can reach the Southern States, and will enable them to carry on a commercial intercourse with the southern markets at all seasons of the year—an end which they cannot attain by any improvement terminating within their own State.

We respectfully invite the people of Iowa to give the subject a careful consideration, to the end that their legislature may be prepared to act upon it at its next session. We have proposed this as a part of a great system of internal improvement west of the Mississippi: it is important that the outlines should be established in the beginning; otherwise, works will be undertaken which in the end will be found unprofitable, and much capital and time may be misapplied.

The line of railway which we have proposed will intersect the southern boundary of Iowa, about midway between the Mississippi and Missouri rivers, and with a system of plank roads as feeders, will afford to the central portion of North Missouri all the commercial facilities that could reasonably be

desired; and should this work never progress beyond the limits of our own State, its benefits would, nevertheless, far exceed the cost of construction. But once commenced under favorable auspices, it will continue onward until it penetrates far into the territory of Minnesota—until it connects the navigable waters of the Gulf of Mexico with those of Hudson's Bay. That this end will be accomplished, in time, no one that comprehends the laws of commerce can doubt; but unless the people of Missouri take the initiatory step, many years may elapse before those of Iowa and Minnesota will move in the matter. The work must commence in Missouri: but Iowa will be ready to perform her part by the time it reaches her border: and as visionary as the project may appear to many, we unhesitatingly advance the opinion that in case Congress should make a liberal appropriation of land in aid of the enterprise, the work will be completed to the centre of Iowa in less than seven years from the date of such appropriation.

ART. III.—REPORT.

OF LIEUT. W. H. C WHITING, CORPS OF ENGINEERS, OF THE EXPLORATION OF A NEW ROUTE FROM SAN ANTONIO DE BEXAR TO EL PASO.

San Antonio, June 10, 1849.

Gen. J. G. Totten, *Chief Engineer of the United States:*

General: The party organised by orders of Gen. Worth as an escort to Lieut. Smith, topograpical engineer, and myself, on our reconnoissance to El Paso, and under my command, consisted of nine men, regarded as well versed in frontier life and experienced as woodsmen and hunters.

We left San Antonio on the evening of the twelfth of February, and, owing to the very severe weather, a wet norther having rendered the roads very heavy, and the fact that our mules, both pack and saddle, were many of them wild, and gave great trouble and delay, only reached Fredericksburg on the 19th.

This town is the last settlement on our route, and distant from San Antonio about seventy-five miles, in a direction a little west of north. The road between these places is through a limestone country, generally well watered, and at convenient distances, but often hilly and stony. Two days were necessarily consumed here in procuring additional animals and provisions—our hasty outfit being found incomplete, and several of the mules unfit for the journey before them.

We started from Fredericksburg on the evening of the 21st of February, and the general direction of the course of the

march having been entrusted by me to Richard Howard, Esq., the volunteer guide of the party, we made the best of our way towards the head of the river San Saba. To his extensive and accurate knowledge of the country traversed, we were indebted for a march through pleasant and well watered valleys, admirably adapted for the purposes of a road, and presenting but little labor to the pioneer.

The general formation of this part of the country is secondary. We met with but few evidences of the primary stratifications, and those chiefly on the Llano and on the right bank of the San Saba. I should not judge, from the necessarily hasty and imperfect examination afforded by the march through, that the region is at all rich in mineral products; although we met with evidences that the enterprising Spanish adventurers, in their search for silver, had traversed the country many years before us. The interesting ruins of the San Saba fort, their position and extent, and the vague traditions both among Indians and white men, of its establishment, and the existence in its vicinity of rich silver mines, seem to contradict this idea; but, though search has often been made for the locality in question, I have heard of no success, nor can I, in anything to which I have access, obtain authentic information as to the object, commencement, and final destruction of this fortress.

Leaving the head of the San Saba river on the morning of the 2d of March, we camped at night upon a little water found in a hole about fifteen miles west, and barely sufficient for the purposes of our small party. It was the last we were to see until one o'clock on the night of the 5th. We emerged on the morning of the 3d upon the elevated table plain, a vast limestone formation, extending many hundred miles, arid and barren, and thinly clad with scattering mezquite, affording a home for the prairie dog and antelope alone.

The singular accuracy of Mr. Howard's judgment was here evident, and in a track he had never traversed. Leading the trail, he brought us, with the instinct of a bee, to the precise spot where the party under Hayes and Highsmith had separated on their return to San Antonio. Here, we had been told we could have water, and from this point it would be abundant until we reached the Pecos. We passed many places where water once had been, but for three days, starting at daylight, and the last day marching until twelve at night, our panting animals, alike with their riders, were unrefreshed by a single drop. A slight mist, which moistened the grass on the night of the 3d, together with the fortunate occurrence of cool and cloudy weather, I believe alone enabled the party to get through.

Here we struck a creek of the Pecos river, and saw the

strange manner in which the rivers and creeks break through the vast limestone strata that many feet above their beds form the great table land. The descent from the latter is generally difficult, often impracticable—perpendicular limestone bluffs, bounding the level plain and rising like steps from the river, and cut by deep ravines, which show the whole elevation in the form of truncated cones, are the general obstacles. Occasional passes are found, however, and on one of these we were fortunate to hit.

This remarkable river, of which so little is known, rises in the mountains near Santa Fe, and, entering the limestone formation in about the latitude of 31 deg. north, its valley gradually contracts until at length it is found near its mouth winding amid perpendicular cliffs; for hundreds of miles it rolls a red and turbid stream, by a channel of only forty feet in width, and rarely varying, with great rapidity and intricate windings, to the eastern point of the large bend of the Rio Grande.

The fords are not numerous or easy.

I found it necessary to construct a small foot-bridge of live oak logs for the passage of our packs. The water at first is not pleasant, but the taste soon becomes accustomed to it. This is probably owing to the vast salt and mineral plains through which it runs further to the nothward.

Our route lay up the bank for some forty miles. As it advanced, nothing could exceed the appearance of desolation and barrenness gradually assumed by the neighboring country. Bare and bleak hills of the same monotonous table formation, and the almost entire want of timber or even foliage, make the landscape a desert. The only wood to be had here for traveling purposes is the stunted mezquite, which here and there furnishes sufficient for cooking. Much travel would soon exhaust that.

The weary march without water had rendered it necessary to recruit the mules by short marches and long rests; and it was not until the 12th that we left the river by a west course. Twenty-five miles of prairie, occasionally intersected by dry gullies and clothed with a growth of chaparral, brought us to a spring, the first of a remarkable range. They appear to extend along the base of the Charrate Sierra. Strongly mineral in their character, large quantities of various kinds of salt are found encrusted on the grass near them. They are pleasant to the taste. Destitute of any mark by which it may be known there is water at hand, the traveler, before he is aware of it, finds himself immediately upon a clear and refreshing spring. There are five of these as yet found by us, though many more may exist, generally from ten to twenty miles apart, and about fifteen from the base of the mountains. Small creeks generally flow from them for a short distance,

and then sink into the prairie. Want of proper facilities prevented an analysis of the salts which appeared on the grass hard by. Two of these springs are designated on the maps of Wislizenus, the intelligent and learned gentleman who accompanied the expedition under Doniphan, as the Ojo Leon and Ojo Escondido; but, put down probably from report, or the maps of the Mexicans, their position and course are not correct.

Our direction was now assumed generally west, in order to leave the mountains known as the Charrate and Diabolo on our left, and, avoiding the rough country in this manner, afterwards strike in a southerly course for Presidio. We were unacquainted with the nature of the great region to our right. The blue peaks of these mountains were plainly visible, and we bore for them.

As we approached, the whole aspect of the country changed. The aqueous formation gave place to the more rugged work of fire: instead of the flat limestone tables, we found hills of difficult access, crowned with dark masses of amygdaloidal basalt. The columnar structure and great height of the cliffs gave an imposing aspect to the scenery.

Finding that as we advanced the range still continued stretching far away to the northward, it was decided to attempt the passage of the mountains and to shape our march directly for Presidio. On the 17th we entered the valleys at the base of the Sierra Diavolo, little aware of the dangers in our path. Following an old and faintly marked trail, which led us close to the main peaks, we had traversed, as we imagined, the whole range, and the country gradually began to appear more open; but, soon after entering a valley where the hills prevented an extended view, the party, on the afternoon of the 17th, were suddenly and completely surrounded by five bands of the Apache warriors, each under its respective chief, and numbering altogether, some two hundred mounted men.

Viewing us as intruders, they advanced with great rapidity, with hostile gestures, bows strung and brandished lances. Completely enveloped, where but little resistance could be made to numbers so greatly superior, without even a shrub to which to tie our frightened animals, and numbering only twelve armed men, the situation of the little band was perilous. Judging that here policy was the true course, while Lieutenant Smith and Mr. Howard coolly extricated the command from their dangerous neighbors, and without hurry or confusion reached the side of a small hill, I remained among the Indians, and gained a little time by holding up my hand for them to stop, and calling on their chiefs for a parley. This was agreed to. Why, I know not; for never were men more completely in the power of this treacherous race than ourselves. They

sternly demanded who we were, and for what we were in the Apache country. One of them named Gomez, and, as we afterwards learned, the terror of Chihuahua, was particularly anxious to attack at once. They were answered that we were Americans, en route to Presidio; our intentions depended on their own. We had come there peaceable; that we remained so, belonged to them. They insisted that we should instantly come with them and have a talk, but were told there could be no conference until their men were drawn off and they came up unarmed. This appeared to excite dissension among them. Some were for instant attack, while others were undecided. Mr. Howard came down and joined me. The chief Gomez called out that we were afraid, and that if we did not move as they said, their fight would commence; but there was that in the eye and reply of our intrepid young guide and interpreter that caused him to lower his tone. It was satisfactory to see at this moment the cool and resolute demeanor of the escort, who, under the direction of Lieutenant Smith, had now tied the heads of their animals together, and were waiting for the raising of a hand to commence the unequal struggle. On the right and left two parties had stripped and dismounted, with their bows and arrows, in readiness to take us as nearly as possible in the flank, while another in front, and mounted, appeared about to charge. But the influence of Gomez was not sufficient to bring the majority of the chiefs to his advice, and they agreed to draw off their people and parley. This was done; and it was decided that they should proceed in advance to the water hard by, where they were encamped, and that we should follow, select our camp, and in the evening decide our future relations by council. We took post in a small ravine, which afforded some little chance for defence. The Indians, who had here a very large cavalcade of horses and a drove of cattle, were all around us. Our situation was gloomy, and few considered we had a chance to escape. The chief Gomez was particularly anxious that we should scatter about and look for wood, here quite scarce, and go to cooking, repeatedly saying he was friendly; but, observing that his party was all mounted, and their bows still strung, we remained together, each man by his saddle, his arms in his hand, and watching with great anxiety the movements of the Indians.

At eight in the evening, the chiefs, unarmed and with their blankets, appeared to talk. Through the medium of Mr. Howard, I explained that we were an advanced party of the army soon to appear upon this line; that towards all friendly Indians the intentions of the United States were friendly; agents would probably be sent among them, and while they continued peaceable they would be put upon the same footing with the other Indian tribes; that the commanding general

was desirous that their chiefs should meet him on his approach and enter into a treaty. Making them some trifling presents of tobacco, &c., which they begged as an earnest of amity, they all seemed satisfied but Gomez, who to the last retained his fierce and insulting demeanor.

They were anxious as to our relations with Mexico, and were told that we had been at war with that power, but were now at peace, and that the army would advance to maintain that peace. The slightest allusion, however, to that part of the treaty which relates to restraining Indian depredations upon Mexico, and restoring Mexican captives would have been the signal for a desperate struggle, from which fifteen men, with but two days' scant allowance of provisions, without wood and water, and totally unsheltered; badly armed, and worse equipped, had but little chance to escape with life.

We lay down that night upon our arms. The extreme coldness of the mountain atmosphere increased our discomfort. Expecting to be attacked each moment, but little sleeping was done. In the morning we learned from a Mexican captive that a war-talk had been held, and Gomez was only prevented during the night from falling on us, by the refusal of the chiefs Cigarrito and Chinonero to aid him.

Saddling up on the morning of the 8th, and leaving this locality, designated in our after conversations as "Gomez camp," we retraced our march of yesterday, guided by the friendly chief Cigarrito. Gomez himself took leave in a very insulting manner, and warned us never to visit that country again. We learned that he was then but four days from Mexico, with a large cavalcade, a great many cattle, and the plunder of his recent excursions into Chihuahua. The old chief who, riding at the head of our train, related these things, added that we must beware of him, for his designs were yet hostile, and begged to be exculpated from all share in his operations. We stopped at Cigarrito's camp, taking a position above it from which we could defy alike open attack and treachery. The Indians, whether friendly or hostile, are the most accomplished thieves I ever met with, and not one who was permitted to come near our fires, in spite of watching, but went off laden with small articles. The most serious loss to myself I did not discover until some days afterwards, when I found that my saddle-bags had been picked of various things, including a bundle of papers, comprising all my orders, instructions, letters, private journal, and money vouchers for disbursements at Fredericksburg. It was done while the council was being held and it was dark. Thus the desire of one day retaliating upon Gomez and his party was not lessened by the reflection that he was then probably using my most important papers to cover cigarritos.

The warning of the old chief of the southern Apaches was not needless. Inducing, by the gift of a couple of blankets, one of his men to put us on a trail which might cross the range of mountains, we left the Apache village. Our route was still somewhat back upon our course, for we found we had come a great deal west, and were told that a difficult and tedious path would have to be followed south if we persisted. The Indian at length, coming in sight of a notable mountain peak, pointed the course and left us. We entered fairly into the gorge of a beautiful pass, and through it, winding its way between lofty and perpendicular walls of basalt, runs a clear brook. The travel was fine, a continued succession of cottonwood groves, mixed with cedar, oak, and hackberry, while the multitude of wild roses, the only ones we had met with in Texas, made a new feature in the picture. We were pleased to find that little or no labor would be required to pass the road through the mountains here; and this, for we had almost despaired of a practicable route, gave new courage.

A small band of Indians in advance of us, and whom we met in the pass towards night, took to flight.

The creek I named the Limpia, and at one o'clock the next day, 30th March, we passed the mountains and reached the point where we were to leave its refreshing waters. The cottonwood trees here, growing to great size, were marked with the rude paintings of the Comanches.

Alarm smokes and signal smokes had now began to appear in every direction, and the signs around us warned us to be guarded. Although only one o'clock, all our preparations to camp were made; the animals staked out, packs and saddles properly placed. The men carefully examined their arms.

At eight o'clock at night, saddling up, we silently took up our sombre march; leaving our camp fires burning, quitting the trails, as another measure of precaution, and holding our course by the stars, the men were directed to march four and five abreast, the pack mules to be led, and the Mexicans to be ready to fasten all the animals together at a moment's warning. We were traversing a bare dogstown prairie. Two hours had scarcely passed when the sudden flashing of signal fires showed our departure was discovered. Expecting every instant the yell of the enemy, almost helpless in our exposed position, the wind blowing a gale in chill and furious gusts, the darkness of the night, with the mountain peaks behind us lit up with the glare of the fires, combined to render that march one which few of us will forget.

Reaching, at one at night, a huge pile of boulders of grit, wearied and desperate, we stopped. The next day we reached the ruins of the Cibolo, where we might regard ourselves in position to bid defiance to Gomez.

It may not be irrelevant here to notice that, on our return march from El Passo, we came by the "Painted Camp" on the Limpia. The grass, where we left it so green and luxuriant, had been trampled by hundreds of horses, and round our camp fires two hundred Apache lodges had been placed the morning only after we had left. Their trails had come in from every direction upon the rising of the signal fires. We learned that Gomez had intended to take us that night, but lost our track.

On the 24th, after a fatiguing march from the mountains, subsisting on a spoonful of pinoli apiece per diem, and for the last three days our allowance of meat reduced to a slice of panther which the Delaware had killed, we reached Fort Leaton. This is the ranch of an American who has placed himself opposite Presidio del Norte.

We had thus, in thirty-two days from Fredericksburg, reached the "Norte." From this point to the Pecos we had found a fine road. The want of water between that river and the San Saba appeared an insurmountable obstacle; but we hoped in returning to find a better route.

The enterprising owner of the vicinity, Mr. Leaton, exerted himself to the utmost, with but small resources, to furnish provisions and animals for our further progress to El Paso, and to advance the expedition in every possible way.

I take great pleasure in noticing Mr. Leaton here. His position is in every respect remarkable. Located in a valley of the Rio Grand, a little below Presidio, with some eight or ten Americans in his employment, he has in a few months accomplished a great amount of severe labor, fortified himself in a good position, secured his stock, and carried to considerable extent his farming operations, his men being all the while obliged to work with their arms at hand. They have been exposed to the incursions of the Indians on one side, and to a series of outrageous impositions and aggressions of the part of the Mexicans on the other, and forced to mount guard day and night. I deemed it my duty to make to General Worth a report upon the conduct of the Mexican authorities at this place.

Mr. Leaton informed me that the Indian tribes were all hostile, and apprehended that it would be impossible to avoid fighting on the march to El Paso. I accordingly increased the party by the addition of two men—all I could find to go with me. Leaving all the baggage which could be spared, and an account of our journey thus far, we set out from Fort Leaton on the 30th of March, to try and find a route by the river to El Paso. I was pleased to find that my men were in nowise daunted by the prophecy that we would not return, and the accounts of the dangers of the route. They appeared, as

always, indifferent and resolute. The importance of a river road between these points had been strongly urged by General Worth.

Fourteen days' march, toilsome and severe, through the splendid scenery of the Rio Grande, sometimes climbing precipitous paths high above the river, sometimes winding along its bank, brought the party to El Paso. During that time we rarely let go our arms, and every precaution of close order of march, scouts in advance and rear, and sentinels whenever we stopped, was adopted and kept up. Fortunately for us, the population of the Rio Grande had left the many Indian towns which successively astonished us, and had retired to spend the spring and summer in the mountains—another of the many instances of providential escape which marked our course.

The first fifty miles lay through a well-wooded valley of the river, presenting little or no obstacle to the passage of the troops. A small fatigue party should always be in advance to clear the chaparral and slope the gullies. The soil is firm gravelly sand, apparently on the river banks quite fertile. The next thirty miles, however, is in the formation called by the Mexicans "caxones," or boxes. Here the red hills are washed by the river, which they overhang in bold precipitous bluffs exceedingly difficult to travel, and much labor will be required to pass a road. Steep narrow ridges of gravel intersect the valley, where valley exists, and at other points high hills, having a base generally of sandstone of different varities, must be turned or climbed by a winding course upon their sides.

From this, with the exception of two passes of a few miles in extent, where the road will cross the hills of the Notch and the Eagle Pass of Mount Chase, the traveling is fair. Beyond, for a hundred miles, the valley of the river gradually widens into fine bottom land, heavily timbered with the cottonwood, light sandy soil, when irrigated judiciously, affording good crops, and fine sites for settlements or posts. This valley finds its northern limit in the mountains which enclose El Paso, and contains the Island, a large tract of fertile land, well settled and cultivated, and now, from the deepest channel of the river being to the west, belonging to the United States.

The difficulties in the way of communication by the Rio Grande bank between Presidio and El Paso are not sufficient to do away with its importance to the public interest. Bound to afford protection to our own settlements which in course of time will advance into this region, and by the stipulations of solemn treaty to restrain and punish Indian depredations upon Mexico, I regard the construction of a military road upon the river here as absolutely necessary to this end. Independent of the fact that communication between posts is itself one

great and most efficient barrier to savage incursions, early secured, it induces settlements, which, in time, peopled by our hardy pioneers, become the best defence of a frontier.

The range of the numerous Apache tribes is directly upon this river. Their winter towns are extensive upon its banks; their spring and summer retreats are found in the mountains, which, with little interruption, extend from Presidio to Santa Fe. Sheltered by the rugged hills of the Rio Grande from the winter storms, their families remain in the cottonwood groves, where their towns are built, while the warriors carry terror and desolation throughout Chihuahua. From the capital to the extreme frontier no hamlet exists where the ruthless hand of the Apache has not been felt. Eye-witnesses alone can have an accurate idea of the terrible extent of these maraudings. On the Mexican side, and in sight of our path, three large presidios, with the remains of cultivation about them, now inhabited by the crow and the wolf alone, stand melancholy monuments of Mexican weakness and Indian ferocity.

Should the route pass to the east of this range, as a military barrier it will be worthless. It should come where the Indians cross with their plunder, and whence, by their own trails, the recesses of the mountains may be reached. The establishment of moving camps, of active mounted men, always on the alert, always ready, it is thought would tend to the speedy establishment of a much more peaceable state of things and at the same time be attended with but little more expense than fixed garrisons. The post of depot and refuge should be garrisoned by infantry, but it will be found that the only efficient force for our great national purpose on this important frontier is cavalry.

On the night of the 12th of April we reached Ponce's ranch, opposite El Paso, the terminus of our outward bound march. The town of El Paso, until the march of Doniphan's column but little known in our country, and that only to the few traders who from time to time passed through it, is situated about eight miles below the Pass, with a population of five thousand. At the head of a fertile tract of the Rio Grande bottom, and shut into the river by the gravel hills to the west, it rejoices in a pleasant climate and productive soil. The low adobes, or mud-walled houses, are relieved to the eye by luxuriant orchards, pretty gardens, and well pruned vineyards. The green and fresh wheat crops growing around, the peach, and pear, and apricot, and quince, in endless profusion, and the fine appearance of the vegetables, give promise of what American industry and cultivation might do where the Mexican is so productive. They raise with their rude instruments only what they require themselves, of wines, liquors, and grains. In

skilful hands the grape here grown will produce delightful wine.

But the greatest abundance and best cultivation is found on La Isla, the fertile island of the Rio Grande, below El Paso, about thirty miles in length, from four to eight broad, and studded with the little towns of Isleta, Socoro, and San Elezano. This island now belongs to the United States, a change greatly rejoiced in by its denizens, but extremely disliked by the Mexican government.

A scarcity at present prevails in the El Paso va ley. This is owing to the fact of their rarely raising more than sufficient for their own wants and the heavy drains upon the farmers by the march of the columns during the war and after the peace. Of stock, the Indians have taken care; and scarcely anything remains of the once numerous herds belonging to the town.

The little hamlet of Isleta, however, originally a village of the Pueblo Indians, as they are called, holds its own well; the slender remnant of some old Aztec tribe, the tradition still alive among them that one day their great Montezuma will return to lift their yoke and redress their wrongs, cultivating patiently their little farms, and retaining to the last their animosity to the Mexican. These, of greater heart than their masters, meet the Apache with his own weapons, and keep themselves inviolate. Still holding to their own dialects and to many old customs, and but half christianised, their worship a rude mixture of Catholic and Pagan rites, their numbers are fast dwindling away, and but few years will pass before the last altar fire of their race will be extinguished.

At an interval of leisure at El Paso, I examined the position of Frontera, situated directly at the pass, with a view to the location of a post for the troops. It appeared to me adapted for the purpose. From it the Santa Fe road, the ford, the Chihuahua and El Paso branches are all commanded, and the control of communications in all directions given to our forces.

Having at length, with much difficulty, succeeded in obtaining a supply of fresh animals and sufficient subsistence, on the 19th of April we joyfully set out on our return march. Several different routes to the Pecos had been proposed to me, but they all struck too much to the north; and, fearful of again encountering the thirsty desert of the great Llano Estacado, I determined, by the advice of the able engineer, Mr. Howard, to take the course for San Antonio, convinced that a route could be had. The strength of the party I had nearly doubled, with a view to a different meeting with our friend Gomez, should we fall in with him.

I had secured the services of the brave Captain Skillman, the same gallant adventurer who, with twenty-one men, dashed into the square of El Paso and took General Armijo in his own

town. He had volunteered on the hazardous duty of going to Presidio, and there obtaining the baggage and papers I had left, with such animals as were fit to return. He was to cross the mountains and attempt to join me on the Pecos. I could spare him but three men, and he left on his perilous adventure two days before us.

Our route now lay for one hundred miles down the Rio Grande ; and, following in the trail by which Gomez had gone out with his late plunder, we were led through a fine pass of the Rio Grande hills, cut by the action of water through an extensive formation of argillaceous and calcareous sandstone. A deserted camp of numberless lodges covered the valley into which the pass emerged, showing that here, too, the Apache had his home.

Crossing an extensive prairie, or broad valley, lying between the Rio Grande mountains and the Sierra Diabolo, we entered the northwestern hills of that extensive range at a point about twenty miles to the west and north of where we were met by Gomez and his band.

Here features of country entirely new presented themselves. The mountains of granite and porphyry, further to the south of basaltic rock, are the most striking we have yet seen. Following an old Indian path, it led us to a deep ravine, in which trickled a clear and cold mountain spring ; from this it climbed, by a steep and perilous ascent of fifteen hundred feet, what we at first thought was a high hill in our cours . It proved to be an elevated table valley, from which, surrounded by groves of oak of every kind and large pines, the loftier peaks rear their heads. The ascent was very severe, but amply repaid by the magnificence of the scene. Stopping to breathe, we could see stretching far to the northward the yellow prairie, with the blue mountains of the Rio Grande in the distance, while beneath, at a fearful depth, lay the ravine, relieved in its rugged grandeur by the dark hues of clusters of Spanish oaks and the occasional glitter of the rivulet in its bottom. Our march, refreshed by frequent springs, continued over pleasant slopes and through superb scenery. The aspect of the whole of this elevated table, the pines and large oaks, altogether so different from any country yet explored by us, almost forced us to the belief that we were too far to the north for our course. We attempted to extricate ourselves from the mountains, now becoming rugged and difficult, by following the course of a creek, but, after hours of slow and toilsome progress between huge walls and over large masses of granite and basalt, we were forced to retrace our steps. Despairing of the road, we were suddenly relieved by the discovery of a pass when most wished for, and shortly had the satisfaction of resting on the head waters of the Limpia.

Marching by the wild Rose Pass, the scene of our gloomy night escape, we continued with little trouble and by rapid stages to the Pecos, taking in our route, and at convenient distance, the springs of the "Basin," the Awache, and the Escondido. Continuing down this river by its right bank, twenty miles below where we crossed before, we were making preparations to ford, when we were relieved by the sudden appearance of Skillman and his men. We had been very anxious about them. Indian signs upon our march had been fresh and frequent. He, too, had met with Gomez, but we now learned that that wily chief, finding that we had escaped him and reached El Paso, had, in the mean time, moved nearer to Presidio, and, fearing lest we might come back with a stronger party, he made a treaty with Mr. Leaton, and permitted Skillman to pass unmolested through his whole tribe.

A march of two days, a distance of about thirty-five miles from the Pecos, brought us to the head springs of the San Pedro, a clear river, which, after a tortuous course of some fifty or sixty miles, finds its way to the Rio Grande. This stream, laid down on the maps as the old boundary between the States of Coahuila and Chihuahua, is but little known. Disturnell's map—an exceedingly incorrect representation, by the way, of the geography of this whole region—puts down upon it an old Spanish fortress called Fort del Altar. We found no traces of it in a march from its head to its mouth. The neighboring country is remarkable. The great limestone table elevation so unbroken, further to the north, is here cut up by innumerable ravines, or canons, of great depth, and frequently showing the whole side but one perpendicular wall. The road here in several places would require preparation, but a tolerable route is easily obtained by keeping the "Divide" for one-half of the way, and the canons of the Pecos for the other. We crossed the San Pedro at the "Painted Pass," an old ford of the Comanches. I gave it its name from the Indian signs in it—descending from the Divide by a picturesque canon which showed in its high walls numerous limestone caves. In one of the largest we stopped to noon. Here, upon the walls, the Comanches had painted their rude sketches of successful forays into Mexico. It seemed that wherever the Indian had his choicest retreats and most favorable routes, we were bound to go.

Here, again, we fell short of provisions, but, more fortunate than before, in the nature of our game, the spoils of five bears, and the successful prowess of our hunter with the venison and the bees, kept us abundantly supplied until we reached the settlements.

Crossing the San Pedro, we emerged in the fine Las Moras valley, an extensive succession of rolling plains, watered by

numerous streams, timbered with the live oak and pecan, and the mezquite, and presenting the finest stock range and the richest soil I had seen in Texas. The traveling was now excellent, and this unbroken country extended to San Antonio, towards which, from the "Painted Pass" our course had been nearly east.

After an absence of one hundred and four days, long since given up as lost by all but a few of the most sanguine, we made our appearance in Bexar on the 24th of May, our long and tedious march having, by its delay, saved an encounter with the cholera, which I consider as another instance of fortunate escape.

A brief summary of the discovered route will not be out of place in this letter. It is extracted mainly from the report rendered in accordance with orders, immediately upon our arrival, to head quarters of the eighth and ninth departments.

Leaving a point on the gulf near Lavaca, it passes through San Antonio, and thence westward, by the well known Woll road, as far as Leona Mound. Continuing a general westerly course, it crosses the Nueces some twelve miles from the Leona, and, ascending from the bed of that river to the plateau beyond, passes the country already described to the "Painted Pass" of the San Pedro. Between these two points it crosses, at convenient distances, the running water of the Piasano, the Elm, the Las Moras, the Zoquete, the Pedro and the San Felipe; thus, in a distance of one hundred and twenty miles, crossing six quite large creeks, with their numerous tributaries. The grazing so far is very good; beyond is not so fair.

Between the San Pedro and the Pecos the labors of the pioneers commence. The road, crossing the former at the "Painted Pass," ascends on to the level Divide by the Canon of the Caves; this canon is abundantly supplied with water a few miles further; and on this *level* table is found the Arroyo de los Palos Blancos, a singular creek, the water of which appears to be slightly sulphuretted; it is, however, drinkable. Two days' march from the Painted Pass reaches the head of running water in the San Pedro, and another finds the so-called head spring, a clear lagoon of living water, surrounded by a heavy growth of pecan.

From this to the river Pecos, a distance of about thirty-five miles, permanent water will not be found; in all wet seasons, however, it is abundant.

The road follows the valley of the Pecos in a northwesterly course for about fifty miles, and then leaving it in a general west direction, and taking in its course the notable springs of the prairie, may pass the Sierra Diabolo by the Wild Rose Pass, or further to the northward by the Gomez Pass, and then

strike the Rio Grande about one hundred miles below El Paso. The course of this river is very incorrectly laid down on the maps; the point at which the road strikes it is nearly in the course between El Paso and San Antonio, the general direction of the stream being here east of southeast. Thence it follows the river to El Paso, leaving it twice by suitable passes to avoid precipitous hills which overhang the waters.

The object of the reconnoissance, as stated in the order of Gen. Worth, to "ascertain if there be a practicable and convenient route for military and commercial purposes, between El Paso and the Gulf of Mexico, passing by or near San Antonio or Austin in Texas," has thus been attained. The great difficulty apprehended was the want of permanent water. It will be seen that no water has been mentioned which is not characterised as living water, and great care was taken to locate the route in such a manner that in all wet seasons water may be found in great abundance. It is believed that no other route yet known to the west presents in this respect the same facilities.

We had thus accomplished our task, with how much good fortune I need not say. Poorly mounted, few in numbers, and hastily equipped, our means of reconnoissance on our right hand and on our left, were entirely wanting; and, glad to return at all, we have been more than satisfied that a route of any description has been found. In so extensive a country, and so little known, it cannot be said that neither other nor better routes do not exist. Much remains to be known. The geography and geology of the whole region is yet to be settled. But so much is accomplished. It is demonstrated that, untroubled by the storms of winter, a route from the Gulf of Mexico to the Great West is opened for the Southern States. And it is not improbable that, at no distant day, the Continent of Asia and the great Chinese Empire will, by this region, become to the United States no longer an Eastern but another Western world.

In concluding this letter, I would say to the Chief Engineer that it is intended merely as a general summary from my journal, and I regret exceedingly that the want of means, and especially of force, has precluded my adding in any manner to the statistical and geological information of the country. I have no apology to make for it but the circumstances of the expedition—not scientific, for we had no time to supply either books, instruments, or maps; not military, for the organization of the party was directly the reverse.

The details of courses, events, &c., will be found in the journal. Possessing none of that interest which scientific explorations have for the thinking and well-informed, and still less the attractive character which similar adventures would

enjoy in the hands of a skilful narrator, it is but a meagre outline of labors which at least were zealous.

Accompanying is a rough sketch of the march, made by the compass, and of course only an approximation to the geography of the country. It may serve to convey an idea of the route.

Howard, an accomplished guide, whose judgment, whenever at fault, his decision compensated; and Brady, with his hardy companions, who, resolute and unmurmuring, escorted us for a march of near sixteen hundred miles, I would once more introduce to the Chief Engineer, accompanying the notice with my thanks.

I am, General, your most obedient servant,

W. H. C. WHITING,
Lieutenant of Engineers.

ART. IV.—AGRICULTURAL ECONOMY.

We commend the following article to the careful perusal and study of our agricultural readers throughout the land; and trust that the profound and comprehensive views of the writer, will be the means of awakening our western farmers to a sense of the importance of preventing a farther depreciation of their soil. We are aware that it is difficult for the man of the West to realise the idea that his deep and fertile soil will ever become poor; or, that the time will arrive when all the rich lands of this great valley will be settled; and, consequently, he regards the time and labor devoted to the improvement of his ground, as so much thrown away. But, by consulting the history of the older States, he will find that districts, which were, originally, quite as productive as the West is at present, have long since been reduced to a condition so sterile that they scarcely produce the means of sustaining him who sows and reaps their stinted harvest; and, if he will estimate the annual increase of population, he must be convinced that all the better lands west of the Rocky Mountains, and even thence to the Pacific Ocean, will be occupied before the present generation shall have passed away. Hence, it is the true policy of those who desire to transmit the means of a comfortable subsistence to their offspring, to improve their land; or, at least to adopt a system of husbandry that will prevent its deterioration; for there will be no unsettled countries of fertile soil, within our present borders, whither the next generation can flee, to escape from the necessity of

repairing the injuries occasioned by the folly and improvidence of their ancestors.

No country can grow rich by exhausting its soil; it may present the semblance of prosperity for a time, but it matters not how much it produces, nor what amount of money may be received in exchange for its products, whenever it ceases to remunerate the labor bestowed upon its culture, the money will disappear; and, the population, reduced to poverty, must in the end, either diminish in numbers or improve the land. On the other hand, the improvement of the soil is a sure guaranty for the prosperity of any country: so long as this policy is steadily pursued its economy in other respects can scarcely be erroneous; its commerce and manufactures placed upon a firm basis, are proof against revulsions; and the profits of every branch of industry so much added to the general wealth. The public policy, also, would become more rational and uniform: for a great part of the political excitement that in times past has disturbed the quiet of the people, and the councils of the nation, may be traced to the depreciation of the soil in the older States. Indeed, a system of husbandry that tends to impoverish the land, until it is rendered incapabe of sustaining its inhabitants, is in violation of the economy of the Creator; and it is impossible for any people to prosper who continually transgress His laws. Nor, are the moral and social effects of the exhausting system to be overlooked or disregarded; the amount of labor required to produce the appliances of a comfortable subsistence increases as the land becomes poorer; the time allowed to social intercourse and mental improvement becomes less; the principle of beauty, which pervades all things in harmony with the economy of nature, giving birth to so many pleasing emotions, departs, and, instead thereof a sense of dreariness is impressed upon the heart, causing the inhabitants to loathe the land of their birth, and flee from the scenes of their childhood as from a pestilence.

From the Genessee Farmer.

"A Few Facts about Soils, Plants, and Animals.—Soils contain, as a general thing, not more than one part in a thousand of the atoms, in an available condition, which nature consumes in forming a crop of any kind. This statement expresses a fact of great practical importance; for the husbanding of these fertilising atoms is the first step towards arresting the impoverisl ment of the earth. It is the matter in the soil which makes crops in one arrangement of its atoms, and forms manure in another condition of the same atoms, that the farmer should learn to preserve from waste and loss.

Soils of different degrees of productiveness, where their mechanical texture and physical properties are alike, always

contain unlike quantities of the food of crops. It seems to make little difference how small is the amount of the lacking ingredient in the composition of cultivated plants. Its absence is fatal to the further growth of the crop, after its appropriate aliment fails in the soil. It is easy to discover the wisdom of this universal law. Suppose Nature should organise grass, grain, and other plants which serve as the daily food of all the higher orders of animals, as well without bone earth (phosphate of lime) as with that mineral. Would it be possible for such grass and grain to yield the blood of domestic animals, and to that of man himself, that solid earthy matter which imparts strength to human bones, and to those of oxen, horses, sheep and swine? Certainly not. Although *iron* is always present in the food and blood of animals, no farmer ever killed a calf, a pig, or an ox, which had iron for the frame of its system. No anatomist ever saw a bone in the body of a person formed of earthy atoms other than such as Providence had fitted for this peculiar function in the animal economy.

The brains and muscles of all animals contain both sulphur and phosphorus as constituent elements. If their daily food, derived as it is from the soil, lacked either sulphur or phosphorous, must not this radical defect in their nourishment soon induce weakness and disease, and finally result in premature death? To prevent consequences so disastrous and so obvious, Nature refuses to organise plants without the presence in the soil, *in an available form*, of those peculiar atoms adapted alike to the wants of vegetable and animal vitality. This wise provision should be studied by every one who desires to enjoy sound health and a long and happy life. Most of the "ills that flesh is heir to," as well as most of the maladies of plants, have their origin in the violation of Nature's laws.

The growth and constitutional vigor of all living beings, not less than the revolution of the earth on its axis, are governed by immutable laws. One of these appears to be, that an atom of carbon (charcoal) shall not perform the function of an atom of iron; nor, can an atom of iron perform the office of an atom of carbon, or that of any other element concerned in the organism of plants and animals. There are only some fifteen kinds of elementary bodies used by Nature in forming every vegetable and animal substance produced on the farm, in the orchard, or in the garden.

The science of rural economy consists in the systematic study of atoms, and the laws by which they are governed, whether they exist in solid or crumbling rocks, in loose earths, in vegetable or animal mould, in fermenting manure, in the living tissues and cells of organised beings, or in the form of invisible gases, diffused through the atmosphere. Every pro-

duct of agricultural labor is either a vegetable or an animal substance; and in its production not an atom of new matter is called into existence. In the language of science, all matter which is neither vegetable nor animal, including air and water, is *mineral.* All minerals are either solids, like sand, clay and lime; or liquids, like water; or gases, like common air. The farmer deals largely with atoms in each of these forms; and hence he should be familiar with the several sciences which treat of natural phenomena, as witnessed in the mineral, vegetable and animal kingdoms. He should know that plants alone could subsist on mineral, or disorganised food —that if there were no plants in the ocean nor on land, neither marine nor land animals could have a being. In the absence of all vegetation, it is obvious that all animals must be carnivorous, or cease to consume organised aliment. Being wholly dependent on mutual destruction for the means of subsistence, every day would diminish the aggregate supply of food, and the last animal would soon die of starvation.

From the above reasoning, it is evident that vegetable life is older on this planet than animal life, and that plants may have flourished thousands of years before the lowest type of a being which depended wholly on organised food for subsistence, was created. It will also be seen that the lines of demarkation between animals and plants are well defined, by the fact that the latter can organise the elements of all vegetable and animal substances into these compound bodies, which the former can not do. All plants *produce and increase* organised matter; all animals *consume and diminish* the quantity of organised food.

Taking the census of 1840 as the basis of the calculation, and adding no more than the usual increase, and the number now employed in agriculture in the United States does not vary much from five millions. The number of acres which they cultivate is not known. In the State of New York there are some 12,000,000 acres of improved land, which includes all meadows and enclosed pastures. This area employs about 500,000 laborers, being an average of twenty-four acres to the hand. At this ratio, the number of acres of improved land in the United States is 120,000,000. But New York is an old and more densely populated State than an average in the Union, and probably twenty-five acres per head is a juster estimate for the whole country. At this rate, the aggregate is 125,000,000. Of these improved lands, it is confidently believed that at least four-fifths are now suffering deterioration in a greater or less degree. The fertility of some, particularly in the planting States, is passing rapidly away; in others the progress of exhaustion is so slow as hardly to be observed by the cultivators themselves. To keep within the truth, the

annual income from the soil may be said to be diminished ten cents an acre on 100,000,000 acres, or on four-fifths of the whole.

This loss of income is $10,000,000, and equal to the sinking of a capital of $166,666,000 a year, paying six per cent. annual interest. That improved farming lands may be justly regarded as capital, and a fair investment when paying six per cent. interest, and perfectly safe, no one will deny. This deterioration is not unavoidable; for thousands of skilful farmers have taken fields poor in point of natural productiveness, and, instead of diminishing their fertility, they have added ten cents an acre to their annual income, over and above all expenses. If this wise and improving system of rotation, tillage and husbandry, were universally adopted, or applied to the 100,000,000 acres now being exhausted, it would be equivalent to creating each year an additional capital of $166,666,000, and placing it in a permanent real estate, where it would pay six per cent. annual interest. For all practical purposes, the difference between the two systems is $333,333,000 a year to the country.

There is another view of this important subject, which is worthy of profound consideration. Of the 12,000,000 acres of improved lands in the State of New York, one million are so cultivated as to become richer from year to year. These improving soils are in the hands of 40,000 cultivators, who take and read agricultural journals, and nobly sustain the State and county societies of that Commonwealth.

Three millions of acres of the 12,000,000 are so managed as barely to hold their own in point of fertility. These lands belong to a class of farmers who do as well as they know from personal observation, and seeing how reading men improve their estates and domestic animals.

Eight millions of acres are in the hands of 300,000 persons who still adhere to the colonial practice of extracting from the virgin soil all it will yield, so long as it will pay expenses to crop it, and then leave it in a thin, poor pasture, for a term of years. Some of these improved farms, which seventy-five years ago produced from twenty to thirty bushels of wheat, on an average, now yield only from five to eight bushels. In an exceedingly interesting work entitled "American Husbandry," published in London in 1775, and written by "an American," the following remarks may be found on page 98, vol. 1:

"Wheat in many parts of the province [New York] yields a larger produce than is common in England. Upon good lands about Albany, where the climate is the coldest in the country, they sow two bushels and better upon one acre, reap from twenty to forty; the latter quantity, however, is not often had, but from twenty to thirty are common; and with such bad

husbandry as would not yield the like in England, and much less in Scotland. This is owing to the richness and freshness of the land.

According to the State census of 1845, Albany county now produces only seven and a half bushels of wheat per acre, although its farmers are on tide water and near the capitol of the State, with a good home market, and possess every facility for procuring the most valuable fertillizers. Dutches county, also on the Hudson river, produces an average of only five bushels per acre; Rensselaer, 8; Westchester, 7; which is higher than the average of soils that once gave a larger return than the wheat lands of England, even with "bad husbandry."

Fully to renovate the 8,000,000 of acres of partially exhausted lands in the State of New York, will cost at least an average of $12.60 per acre, or an aggregate of $100,000,000. It is not an easy task to replace all the bone earth, potash, sulphur, magnesia, and organised nitrogen in mold, consumed in a field which has been unwisely cultivated 50 or 75 years. Phosphorus is not an abundant mineral anywhere, and his subsoil is about the only resource of the husbandman, after his surface-soil has lost most of its phosphates.

The 300,000 persons that cultivate these 8,000,000 acres of impoverished soils annually produce less by $25 each than they would if the land had not been injured. The aggregate of this loss to the State and the world is $7,500.000 per annum, or more than seven per cent. interest on what it will cost to renovate the deteriorated soils. There is no possible escape from this oppressive tax on labor of $7,500,000, but to improve the land or run off and leave it. That the latter has been done to a large extent, is shown by comparing the population in rural districts at the census of 1830 with that of 1840. In nearly half the towns in the State, population has decreased, notwithstanding the rapid growth of cities and villages, demanding an increase of farm laborers to supply the mere local markets. The canals of New York have operated to hasten the exhaustion of its soils, just as a road to California would aid in extracting gold dust from its now unwashed sands. While the canals and railroads of New York convey a thousand tons of the few precious atoms in the surface of the earth, which can alone form bread and meat, to tide water, they do not carry back from tide water one ton of the raw material for making crops of any kind. A million tons of human food pass down the Mississippi where one ton of the elements of such food ascends the father of waters."

It will be seen, on referring to the census of 1840, that the five States of Maryland, Virginia, North and South Carolina, and Georgia employed at that time 1,013,463 persons in agriculture. Of this number, Maryland had 69,851; Virginia,

318,771; North Carolina, 217,095; South Carolina, 198,363; and Georgia, 209,383.

It is a statistical question of considerable importance, to determine how much less these laborers and the mules, horses, and oxen, which they work, annually produce, than they would had no acre of the arable lands in these States, so highly favored by climate and fertility, been damaged in the least by improper tillage. The difference in the cost of making crops on poor lands and on good land is really much greater than is generally supposed. The shrewd farmers of Massachusetts prefer giving 60 cents a bushel for Western corn, to growing this grain on their unfertile soil; while the corn-growers of Indiana and Illinois are glad to sell their crops, made on rich land, at 20 cents a bushel. From these facts, is not the inference plain and satisfactory that it costs three times more to produce a bushel of corn on *poor* than on *rich* land?

To do full justice to this interesting problem "By what means, and to what extent the soils of the five States above named have been injured," would fill a volume. A residence of more than two years in the most southern of these States, connected with its agricultural press, and devoting much time to the study of soils and their products, will warrant the writer in expressing an opinion on the weight of evidence called from all sources within his reach. The annual loss on the labor of each hand and mule is believed to be $30. This estimate is too high on some plantations, and too low on others. The only reason why so many slaves have been sent South during the last twenty-five years (and thousands sent out of Georgia) is that the labor of a person is worth twice as much to cultivate rich, fresh land, as poor old land.

If the estimate of a yearly loss of $30 on each hand, and the domestic animals which he works, be not too high, then the aggregate exceeds thirty millions of dollars. This is equivalent to having sunk a productive capital invested in farming lands, at a cheap rate, of five hundred millions of dollars, yielding six per cent. annual interest. While England and France have derived hundreds of millions of profit and revenue from the tobacco and cotton exported from Georgia, the Carolinas, Virginia, and Maryland, a large share of all the proceeds received for these staples, which have so desolated the earth over immense districts, has left these old impoverished States, with their emigrating citizens, never to return.

This unwise system of things is extending rapidly in the United States.

Manufacturers, merchants, and mechanics often shift their settled policy, when they see a profit in making a change. But whoever expects millions of isolated farmers to change suddenly their practices, ideas, and systems of culture and hus-

bandary shows that he has not labored twenty years to substitute an improving for an exhausting system of field culture. At a fair estimate, there are at this time 2,741,966 persons employed in agriculture in the fifteen slave-holding States. Before the study of rural economy as a science will become as popular as the study of politics, law and medicine, the South will have at work in the field a force of five millions of operatives. Who does not see that the wise and skilful employment of this vast power of production is a matter of inestimable consequence to all the planting States, and to unborn millions who must dig their daily bread from impoverished soils, if the mighty work of land exhaustion is to increase and extend, as population spreads over the cotton, tobacco, and sugar-growing parts of the Union? Propagated by buds instead of seeds, the sugar cane will be found, like the potatoe plant, less liable to withstand the customary abuses of the earth—the rude violation of the laws of nature—than tobbacco, corn, wheat, and cotton plants. But all three are suffering in vital force and constitutional vigor, by reason of their defective food, in partially exhausted soils. Any living being may habitually take a very little poison into its system without destroying life. Pursue the practice of poisoning the blood of animals or the juices of plants, only to a very small degree, and it will tell in the course of a few generations, in strange, new, and incomprehensible maladies. An instructive and useful book might be written on the diseases of cultivated plants, to say nothing of those of domestic animals. Mildew, mold in cheese, rust on wheat and cotton, and fungi, believed by naturalists and botanists to be so injurious to potatoes, are all in a good degree, like other vegetable creations, subject to the control of human industry and science.

If we visit the farmers of the Northwest, we shall find the popular feeling developing itself after this fashion: "Let us construct railroads and canals, improve our navigable rivers and lake harbors, purchase the best farm implements, and then employ all our capital and energies in transforming every atom in the soil which will make grain, provisions, and wool into those marketable commodities, and send them to distant cities and nations for consumption. This agricultural and commercial enterprise is complacently regarded as the wise development of the Agricultural resources of a new country! Although the inevitable results of this practice may be seen in each of the old thirteen States, as in the valleys of the Mohawk and Hudson, yet it is confidently believed by sanguine farmers that the truly rich soils of the West are inexhaustible.

Whoever will examine this great national question, of taking everything out of the land and putting nothing back, must be satisfied that no other than the most disastrous consequences can

follow. The number of laborers employed in this simple operation increases at the rate of 200,000 a year in the United States.

To repair the damage already done to the soil, will cost over one thonsand millions of dollars.

Fr m Hunt's Merchants' Magazine.

ART. V.—COMMERCIAL STATISTICS.

IMPORTS INTO THE UNITED FROM ALL NATIONS.

Statement of Goods, Wares, and Merchandise imported into the United States from foreign countries during the year ending June 30, 1849.

Whence imported.	Free of duty.	Paying duties.	Total.
Russia,	$45,585	$794,653	$840,238
Prussia,		17,687	17,687
Sweden and Norway,	34	731,812	731,846
Swedish West Indies,	9,918	6,064	15,982
Danish W. Indies,	22,253	316,888	339,141
Denmark,	500	18,704	19,204
Hanse Towns,	90,901	7,651,963	7,742,864
Holland,	209,906	1,291,737	1,501,643
Dutch W. Indies,	41,786	411,313	453,099
Dutch E. Indies,	332,596	121,932	354,528
Dutch Guiana,	1,933	56,348	58,281
Belgium,	7,675	1,836,618	1,844,293
England,	4,069,015	54,749,410	58,818,425
Scotland,	122,966	1,836,354	1,959,320
Ireland,	6,270	370,523	376,793
Gibraltar,	———	1,193	1,193
Malta,	———	8,405	8,405
British E. Indies,	11,738	2,024,516	2,036,254
Cape of Good Hope,	997	70,301	71,298
British Honduras,	109,053	153,364	262,417
British Guiana,	5,614	19,906	25,520
British W. Indies,	339,384	658,481	997,865
British Am. colonies,	154,588	1,191,210	1,345,798
Other British colonies,	———	3,613	3,613
Canada,	586,341	894,741	1,481,082
France on Atlantic,	329,828	22,880,050	23,209,878
France on Mediter'n,	763	1,153.142	1,153,905
French Guiana,	3,720	19,697	23,417
French W. Indies,	44,976	26,493	71,469
Spain on Atlantic,	24,604	288,886	313,490
Spain on Mediterranian,	112,618	893,069	1,005,687

Statement of Goods, Wares, and Merchandise imported into the United States—Continued.

Whence imported	Free of duty.	Paying duties.	Total
Teneriffe and Canaries,	———	38,919	38,919
Manilla & other Phil. Isl.,	33,274	1,093,840	1,127,114
Cuba,	719,054	9,940,911	10,659,956
Oth. Spanish W. Ind.,	52,774	1,912,087	1,964,861
Portugal,	1,860	320,360	322,220
Madeira,	200	73,559	73,759
Fayal and Azores,	3,500	13,552	17,052
Cape de Verds,	———	1,853	1,853
Italy,	33,088	1,517,808	1,550,896
Sicily,	251	529,993	530,244
Sardinia,	42,285	253	42,538
Trieste & oth. Aus. ports,	3,927	405,251	409,178
Turkey,	7	374,057	374,064
Ionian Islands,	———	291	291
Hayti,	694,499	207,225	901,724
Mexico,	1,696,237	520,482	2,216,719
Central Repub. of Am.,	5,907	50,110	56,017
New Granada,	72,206	86,754	158,960
Venezuela,	931,404	481,692	1,413,096
Brazil,	6,788,803	1,705,565	8,494,368
Cisplatine Republic,	———	79,924	79,924
Argentine Republic,	2,004	1,707,823	1,709,827
Chili,	282,273	1,535,450	1,817,723
Peru,	119,062	327,891	446,953
S. America generally,	11,450	4,709	16,159
China,	4,077,257	1,436,528	5,513,785
Asia generally,	4,030	205,639	209,669
Africa generally,	101,443	394,299	495,742
South Seas & Pac. Oc.,	71,522	13,796	85,318
Sandwich Islands,	43,795	80	43,875
Total, - - -	$22,377,565	125,479,774	147,857,439

COMMERCE OF UNITED STATES WITH ALL NATIONS.

STATISTICAL VIEW OF THE COMMERCE OF THE UNITED STATES, EXHIBITING THE VALUE OF EXPORTS TO, AND IMPORTS FROM, EACH FOREIGN COUNTRY, DURING THE YEAR ENDING JUNE 30, 1849.

Countries.	*Value of Exports.* Domestic produce.	Foreign produce.	Total.	Value of imp.
Russia,	$937 557	$197,947	$1,135,504	$840,238
Prussia,	34 703	9 516	44,219	17 687
Sweden and Norway,	725,281	38 506	763 787	731.846
Swedish West Indies,	95 128	737	95 865	15.982
Denmark,	55 138	.....	55 138	19.204
Danish West Indies,	727 197	54,149	781 346	339,141
Hanse Towns,	2,710.248	604 682	3,314 930	7,742,864
Hanover,	8,496	85	8 581	.....
Holland,	2 155 328	242 027	2 397,355	1,501,643
Dutch East Indies,	280 823	54.118	334 941	354,528
Dutch West Indies,	317,066	50,252	367,318	453,099

STATISTICAL VIEW OF THE COMMERCE OF THE UNITED STATES—CONTINUED.

Dutch Guiana,	104 013	52	104 065	58,281
Belgium,	2,443,064	288.243	2 731 307	2 844,293
England,	69 161.992	1 880 878	71,042 870	58 818 426
Scotland,	3,549.960	58 472	3,608,432	1,959,320
Ireland,	3,916 342	22,526	3 938 868	376,793
Gibraltar,	723,819	78 467	802 286	1,193
Malta,	51 233	62 734	113 967	8 405
British East Indies,	332 962	76 562	409 524	2,036,254
Cape of Good Hope,	94 422	.....	94 422	71 298
Mauritius,	21 731	5,000	26 731	.....
Honduras,	191 347	34.620	225 967	262,417
British Guiana,	662.315	3 759	666,074	25 520
British West Indies,	3 935,934	203,097	4 138 931	997,865
Canada,	2.320,323	1.914 401	4 234 724	1,481,082
British American colonies,	3,611,783	257,760	3 869 543	1,345 798
Other British colonies,	.....	.....	.....	3,613
France on Atlantic,	11,646 612	2,818,303	14,464,915	23,209,878
France on Mediterranian,	875.147	168 521	1,045 668	1,153 905
French West Indies,	180 731	14,267	194 998	71,469
Miquelon & French fisheries,	20 370	.....	20 370	.....
French Guiana,	46.161	.....	46,161	23,417
Bourbon, (French E. Indies)	9,473	.....	9,473	.....
French possessions in Africa,	.....	.....	.....	.....
Spain on Atlantic,	169 071	31,479	200.550	313,490
Spain on Mediterranian,	1 619,423	19 827	1,639 250	1,005,687
Teneriffe & other Canaries,	17.840	654	18 494	38,919
Manilla & Phillippine Isl.,	137.868	8,669	146 537	1.127,114
Cuba,	4,641.145	668 068	5,309,213	10.659,956
Other Spanish West Indies,	523 292	33 234	556,526	1,964,861
Portugal,	169 721	6,273	175 994	322,220
Madeira,	117 878	759	118 637	73 759
Fayal and other Azores,	14 204	1.839	16.043	17,052
Cape de Verds,	62 647	3 815	66 462	1 853
Italy,	811 450	293 419	1,104 869	1,550 896
Sicily,	24.359	4 854	29,213	530 244
Sardinia,	460 950	21,414	482 364	42,538
Tuscany,	$30 076		$30 076	
Trieste & other Austrian ports	942,489	$464.376	1.406.865	$409 178
Turkey,	193,876	85,120	278,696	374,064
Ionian Islands,				291
Hayti,	532.577	70,015	602.592	901,724
Mexico,	1,045 999	1,042 869	2,090,868	2,216,719
Central Republic of America,	112.480	23 739	136 219	56,017
New Granada,	244.460	53 324	297.784	158.960
Venezuela,	421,421	106,213	537,634	1,413,096
Bolivia,				
Brazil,	2,838.380	264 597	3.101.977	8,494,368
Cisplatine Republic,	131.638	13 089	147,729	79,924
Argentine Republic,	595 518	172 076	767.594	1,709,827
Chili,	1,722,457	294.643	2,017,100	1 817.728
Peru,	93,195	18 041	111,236	446.953
China,	1,490,945	122 279	1,583,224	5,513,785
Burmah,				
Liberia,				
West Indies generally,	106 329	2.395	108.724	
South America generally,	85.215	8,019	93,234	16,159
Europe generally,	18.588		18 588	
Asia generally,	314,436	19,375	363 811	209 669
Africa generally,	676.769	31 642	708,411	495 742
South Seas and Pacific Ocean,	336,660	63,068	399,728	85,318
Indian Ocean,				
Atlantic Ocean,				
Sandwich Islands,				43 875
North west Coast,				
Uncertain places,				
Total,	$132,666,955	$13,088,865	$145,755,820	$147,857,439

STOCKS OF LEAF TOBACCO IN EUROPE.

ESTIMATED STOCKS IN EUROPE ON 31st DECEMBER FOR LAST FIVE YEARS.

	1845.	1846	1847.	1848.	1849.
London hhds.	27,513	33,374	28,578	28,031	26,547
Liverpool,	16,900	20,500	18,400	16,119	16,355
Bristol, New Castle, &c.,	1,700	2,000	2,090	2,301	2,645
Scot and,	1,300	1,700	2,590	1,740	1,980
Ireland,	1,800	1,600	1,800	1,600	1,600
North of Europe,	200	200	200	200	200
Bremen and Hamburg,	13,600	17,500	12,400	14,500	10,000
Amsterdam, Antwerp & Rotterdam,	26,000	21,700	20,700	15,500	10,800
Spain and Portugal,	2,000	2,000	900	200	200
France,	200	200	200	200	200
Total,	91,213	100,774	88,858	80,391	70,535

From the Cannelton (Ind.) Economist.

WABASH TRADE.

The statement below, furnished us by the President of the Wabash Navigation Company, will give some idea of the resources of this valley, which are now being rapidly developed. The tolls charged are upon the manifests of the cargoes of the boats. Of course, it can hardly be expected that, in all cases, a full statement has been furnished. Twenty per cent., it is believed, would not make up the amount omitted in the manifests. When we take into account the produce and imports, below the lock on the Wabash, the White Rivers, and other tributaries, and the amount that goes by the canal and the lakes, eighty per cent. more money may be added on the average. Some articles may not come up to the amount, but others will exceed. This being the case, by doubling the amount of the articles enumerated in the abstract, a tolerably fair estimate of the trade of the Wabash may be arrrived at.

This, however, includes no portion of the fall trade, the great item of which is wheat.

To the Editor of the Vincennes Gazette:

Below you will find a further abstract from the reports of the Collector of the Wabash Navigation Company, of freights, boats, &c., passed the lock at the Grand Rapids, up to June 1st, commencing December 1st, 1849—a period of six months.

Pork, bacon &c., lbs.	7,932,971	Molasses, do.	3,218
Lard, lbs., do.	1,999,695	Flour, do,	8,252
Live Hogs	1,483	Apples, do.	161
Cattle, Sheep &c.,	267	Potatoes, bushels,	2,952
Poultry, dozens,	2,674	Lime—barrels,	999
Corn, bushels,	455,815	Hay—tons,	101 1-2
Wheat do.	1,177	Lumber, feet,	188,838
Oats, do.	65,468	Staves,	20,000
Rye, do.	1,484	Hoop poles,	35,188
Barley, do.	82	M'dze, Groc's &c. lbs	9,528,290

Salt, barrels,	21,970	Passengers,	2,830
Salt, sacks,	7,078	Steamboats,	282
Whisky, barrels,	1,419	Flatboats, &c.,	164
Pork barrels,	50,851		

ABNER T. ELLIS, President.

Vincennes, June 8, 1850.

ART. VI.—COMMERCIAL REGULATIONS.

NICARAGUA TREATY.

CONVENTION BETWEEN THE UNITED STATES OF AMERICA AND HER BRITANIC MAJESTY.

The United States of America and Her Britanic Majesty, being desirous of consolidating the relations of amity, which so happily subsist between them, by setting forth and fixing in a convention their views and intentions with reference to any means of communication by ship-canal which may be constructed between the Atlantic and Pacific oceans, by the way of the river San Juan de Nicaragua, and either or both of the Lakes of Nicaragua or Managua, to any port or place on the Pacific ocean, the President of the United States has conferred full powers on John M. Clayton, Secretary of State of the United States, and Her Britanic Majesty on the Right Honorable Sir Henry Lyton Bulwer, a member of Her Majesty's Most Honorable Privy Council, Knight Commander of the Most Honorable Order of the Bath, and Envoy Extraordinary and Minister Plenipotentiary of Her Britanic Majesty to the United States, for the aforesaid purpose; and the said plenipotentiaries, having exchanged their full powers, which were found to be in proper form, have agreed to the following articles: —

Art. 1. The Governments of the United States and Great Britain hereby declare that neither the one or the other will ever obtain nor maintain for itself any exclusive control over the said ship-canal: agreeing that neither will ever obtain nor maintain for itself any exclusive control over the said ship-canal: agreeing that neither will ever erect or maintain for itself any fortifications commanding the same, or in the vicinity thereof, or occupy, or fortify, or colonize, or assume, or exercise any dominion over Nicaragua, Costa Rica, the Mosquito coast, or any part of Central America; nor will either make any use of any protection which either affords or may afford, or any alliance which either has or may have to or with any State or people, for the purpose of erecting or maintaining any such fortifications, or occupying, fortifying, or colonizing Nicaragua,

Costa Rica, the Mosquito coast, or any part of Central America, or of assuming or exercising dominion over the same; nor will the United States or Great Britain take any advantage of any intimacy, or use any alliance, connection, or influence, that either may possess with any State or Government through whose territory the said canal may pass, for the purpose of acquiring or holding, directly or indirectly, for the citizens or the subjects of the one, any rights or advantages, in regard to commerce or navigation through the said canal, which shall not be offered on the same terms to the citizens or subjects of the other.

Art. 2. Vessels of the United States or Great Britain traversing the said canal, shall, in the case of war between the contracting parties, be exempted from blockade, detention, or capture by either of the belligerents; and this provision shall extend to such a distance from the two ends of the said canal as may hereafter be found expedient to establish.

Art. 3. In order to secure the construction of the said canal, the contracting parties engage, that if any such canal shall be undertaken upon fair and equitable terms by any parties having the authority of the local government or governments through whose territory the same may pass, then the persons employed in making the said canal, and their property used, or to be used, for that object shall be protected, from the commencement of the said canal to its completion, by the governments of the United States and Great Britain from unjust detention, confiscation, seizure, or any violence whatsoever.

Art. 4. The contracting parties will use whatever influence they respectively exercise with any State, States, or governments, possessing, or claiming to possess, any jurisdiction over the territory which the said canal shall traverse, or which shall be near the waters applicable thereto, in order to induce such States or governments to facilitate the construction of the said canal by every means in their power. And, furthermore, the United States and Great Britain agree to use their good offices, wherever or however it may be most expedient in order to procure the establishment of two free ports—one at each end of the said canal.

Art. 5. The contracting parties further engage, that when the said canal shall have been completed they will protect it from interruption, seizure, or unjust confiscation, and they will guaranty the neutrality thereof, so that the said canal may be for ever open, and the capital invested therein secure. Nevertheless, the governments of the United States and Great Britain, in according their protection to the construction of the said canal, and guarantying its neutrality and security when completed, always understand that this protection and guaran-

ty are granted conditionally and may be withdrawn by both governments, or either government, if both governments or either government deem that the persons or company undertaking or managing the same adopt or establish such regulations concerning the traffic thereupon as are contrary to the spirit and intention of this convention, either by making unfair discriminations in favor of the commerce of one of the contracting parties over the commerce of the other, or by imposing oppressive exactions or unreasonable tolls upon passengers, vessels, goods, wares, merchandise, or other articles. Neither party, however, shall withdraw the aforesaid protection and guaranty without first giving six months notice to the other.

Art. 6. The contracting parties in this convention engage to invite any State with which both or either have friendly intercourse to enter into stipulations with them similar to those which they have entered into with each other, to the end that all other States may share in the honor and advantages of having contributed to a work of such general interest and importance as the canal herein contemplated. And the contracting parties likewise agree that each shall enter into treaty stipulations with such of the Central American States as they may deem advisable, for the purpose of more effectually carrying out the great design of this convention—namely, that of constructing and maintaining the said canal as a ship communication between the two oceans, for the benefit of mankind on equal terms to all, and of protecting the same. And they also agree that the good offices of either shall be employed, when requested by the other, in aiding and assisting the negotiation of such treaty stipulations; and should any difference arise as to the right of property over the territory through which the said canal shall pass between the States or governments of Central America, and such difference should in any way impede or obstruct the execution of the said canal, the governments of the United States and Great Britain will use their good offices to settle such differences in the manner best suited to promote the interests of said canal, and to strengthen the bonds of friendship and alliance which exist between the contracting parties.

Art. 7. It being desirable that no time should be necessarily lost in commencing and constructing the said canal, the governments of the United States and Great Britain determine to give their support and encouragement to such persons or company as may first offer to commence the same, with the necessary capital, the consent of the local authorities, and on such principles as accord with the spirit and intention of this convention; and if any person or company should already have, with any State through which the proposed ship-canal may

pass, a contract for the construction of such a canal as that specified in this convention, to the stipulations of which contract neither of the contracting parties in this convention have any just cause to object, and the said persons or company shall, moreover, have made preparations, and expended time, money, and trouble, on the faith of such contract, it is hereby agreed that such persons or company shall have a priority of claim over every other person, persons, or company to the protection of the governments of the United States and Great Britain, and be allowed a year from the date of the exchange of ratifications of this convention for concluding their arrangements, and presenting evidence of sufficient capital subscribed to accomplish the contemplated undertaking; it being understood, that if, at the expiration of the aforesaid period, such persons or company be not able to commence and carry out the proposed enterprise, then the government of the United States and Great Britain shall be free to commence and proceed with the construction of the canal in question.

Art. 8. The governments of the United States and Great Britain having not only desired, in entering into this convention, to accomplish a particular object, but also to establish a general principle, they hereby agree to extend their protection, by treaty stipulations, to any other practicable communications, whether by canal or railway, across the isthmus which connects North and South America, and especially to the interoceanic communications should the same prove to be practicable, whether by canal or railway, which are now proposed to be established by the way of Tehuantepec or Panama. In granting, however, their joint protection to any such canal or railways as are by this article specified, it is always understood by the United States and Great Britain that the parties constructing or owning the same shall impose no other charges or conditions of traffic thereupon than the aforesaid governments shall approve of as just and equitable; and that the same canals or railways, being open to the citizens and subjects of the United States and Great Britain on equal terms, shall also be open on like terms to the citizens and subjects of every other State which is willing to grant thereto such protection as the United States and Great Britain engage to afford.

Art. 9. The ratification of this convention shall be exchanged at Washington within six months from this day, or sooner, if possible.

In faith, whereof, we, the respective plenipotentiaries, have signed this convention, and have hereunto affixed our seals.

Done at Washington, the 19th April, 1850.

John M. Clayton, [L. S.]
Henry Lytton Bulwer, [L. S.]

From the "Merchant's Magazine."

PORT OF REALIJO, NICARAGUA.

The Supreme Director of the State of Nicaragua, being informed that on or before the first of May next the American lines of steamers in the Pacific Ocean propose to establish depots in the port of Realijo, and to touch there in their voyages to obtain supplies of coals and provisions, therefore, and in virtue of the powers conferred by the law of the 4th October last, he does

DECREE.

ART. 1. The said lines of steamers shall have the right to enter and depart from the said port free of all anchorage or tonnage duties.

ART. 2. All vessels exclusively carrying coal for said steamers shall be allowed to enter said port and discharge their cargoes upon the same terms.

ART. 3 Each of the said lines of steamers shall have the privilege of erecting such wharfs or docks as may be necessary for the objects above indicated, under such regulations as may be agreed upon with the government.

ART. 4. All regulations conflicting with the provisions of this decree are hereby suspended.

Dated in Leon, this 7th day of March, 1850.

NORBERTO RAMIREZ.

From the "Merchant's Magazine."

FREEDOM OF THE COASTING TRADE OF INDIA.

An extract of a letter to Frederick Tudor, Esq., of Boston, received by the last India mail, from Messrs. Binney & Co., dated Madras, April 12, 1850 :—"In pursuance of this opening of the ports in India to entire freedom, the bark Brothers, of Boston, was, at last accounts, taking in cargo of salt at Bombay for Calcutta, on freight."

FORT WILLIAM, HOME DEPARTMENT, March 8, 1850.

The following act, passed by the Governor General of India, in council, on the 8th of March, 1850, is hereby promulgated for general information :—

AN ACT FOR FREEDOM OF THE COASTING TRADE OF INDIA.

Whereas, by an act of Parliament passed in the thirteenth year of the reign of Her Majesty, entitled an Act to Amend the Laws in Force for the Encouragement of British Shipping and Navigation, it is enacted with regard to the coasting trade of India that it shall be lawful for the Governor General of India in Council, to make any regulations authorizing or permitting the conveyance of goods or passengers from one part of the possessions of the East India Company to another part thereof, in other than British ships, subject to such restrictions

or regulations as he may think necessary. It is enacted as follows:

1. Goods and passengers may be conveyed from one part of the territories under the government of the East India Company to another part thereof, in other than British ships without any restriction other than is or shall be equally imposed on British ships for securing the payment of duties of customs, or otherwise.

FRED. JAS. HALLIDAY, Secretary to the Governor of India.

AGRICULTURAL DEPARTMENT.

PROSPECTS OF THE WOOL TRADE FOR 1850.

New England contains at this time 400 woolen factories, capable of consuming, when in full operation, thirty-five million pounds of wool. To supply this quantity, she has the surplus received through the New York canals, three-fourths of her importations, about one-quarter of the Pennsylvania receipts, and the surplus from her own wool growers.

New York canals, - - -	£12,731,402
New England surplus, say - -	5,000,000
3-4 Importations, - - - -	13,501,000
1-4 Pennsylvania receipts, - -	1,280,000
Total for New England, - - -	32,412,402

New York produces about twenty millions, and there were received from the West, by the way of Buffalo, eight millions and a quarter more, which would leave about eight millions, after deducting the amount received through the canals for home consumption. But to this is to be added about four millions of foreign wool, making a total consumption of at least twelve millions. Pennsylvania and New Jersey consume about ten millions more, and the consumption in all other States will make about six millions more. It would require then, for the consumption of the manufactories, for the coming year, if the fabric should be in brisk demand, no less than sixty-five millions of pounds.

There can be no doubt as to the fact that there is now no surplus of wool in this country, indeed there is none in the whole world. Every thing has been worked in this country, in England, Germany and France. The wool has been drawn out from South America, Australia, and the Mediterranean ports, both of Asia and Africa, and yet there is not enough. The demand has outstripped the production, not only in this but in all countries, and it will be many years before they be equal, or that there will be a surplus. Every pound of wool raised in the U. S. will be consumed, and with that over sev-

enteen millions of foreign wool. There will be a still greater deficiency this year, and a larger amount will be imported. Taking the price at which the market closes, and all grades of wool except very fine, is higher here than in any other market, and as a consequence it will come to this market until the demand is supplied. Upon the price of foreign wool will depend, to a certain extent, the prices of domestic. From the present appearance, the price must rule higher this year than the last. But it is quite certain that the foreign wool will be the means of keeping down the price of domestic by enabling the manufacturers to keep out of the market, unless they can buy at their own figure. It is equally certain, that if the farmers could get the profit which is now paid by the manufacturers to the dealers, and at the same time keep the market steady. That, however, cannot be done, and they will generally sell at such prices as they dictate.—*Wool Grower.*

CULTURE OF ARROWROOT IN FLORIDA.

We have long regarded Florida as destined to become the garden of the more northern States ; and although a large portion of her soil is comparatively poor, yet, if appropriated to the culture of such plants and fruits as the climate is best calculated to produce, it is capable of yielding as rich a harvest, perhaps, as any State in the Union. There are few tropical plants or fruits that may not be produced in some part of her territory ; and with reasonable facilities of transportation, a ready and remunerating market would always be found for them.

We are pleased to learn that the culture of Arrowroot is likely to prove successful and profitable; and hope that success in this will lead to the culture of other plants not less useful. It is no small matter in the commerce and economy of the country, that one of our own States should supply it with the luxuries of the tropics. We copy the following from the "Ancient City." EDITORS.

"MARION COUNTY ARROWROOT"

"MR. EDITOR :—False impressions not unfrequently exist, not less in regard to localities than individuals. Such impressions are alike the result in both cases, sometimes of malignant misrepresentation, sometimes of careless unenquiring ignorace. It is a far more easy task to adopt opinions than to form them by the process of careful observation, of comparison and elaborating reflection. Hence it is, that places and persons often acquire reputation not borrowed on merit, or lose a good name without cause. This last remark is emphatically verified in the false estimate made abroad of our eastern Flor-

ida, both as regards its climate and its agricultural capacities. A few hundred miles beyond its line of connection with coterminous States, one portion of the peninsula is believed to be made up of swamps and sand hills—the first as fatal to life as the pontine marshes of Rome, the other as barren as the great Sahara of Africa. The peculiar geographical position we occupy, giving us no intermediate relations with other portions of our wide-spread country, invites to no examination, however transient, furnishes no opportunity for enquiry, whether this character be deserved or not. It should be the task of all whose interests are connected with the establishment of the true character of Eastern Florida, to correct the false views which exist in regard to its climate and its lands and its agricultural staples, without other remark at this time in reference to climate and soil, than that the one is abundantly fertile and the other healthful, as may be shown, and will probably be shown hereafter, by the irrefutable testimony of facts. I will, in obedience to the wishes of a friend, suggested to me since I came to this place, communicate such information as I possess in regard to *arrow-root*, soon to become, according to existing indications, an important article, among the products of the country.

Let it be premised that my experimental acquaintance with the cultivation &c., of this article, is confined to a single crop. Even this limited information, however, justifies me in the remark that he who knows how to make a crop of corn, cannot fail in an effort to make a crop of arrowroot. The planting may be begun at any time after the preceding crop has been gathered, and the sooner the better. The eyes of the root (and if economy in seeds be an object, but one eye need be left on a cutting,) should be deposited in rows two and a half feet apart, and at the distance of fifteen or eighteen inches apart in the row, and covered with plough or hoe to the depth of three or four inches. The after culture, as regards mode and manner, is identical with that of corn. Poor land will yield an average product through a term of years, of not less than eighty bushels per acre, whilst the good hammock lands of the interior, or lands fertilized by the application of appropriate manures, will yield, (I think I hazard nothing in saying) from one hundred and fifty to two hundred bushels, and perhaps more, to the acre. A bushel of roots, with defective machinery, will yield six pounds of fecula, whilst somewhat more than nine pounds have been extracted by careful manipulation, with such improvements of machinery as the importance of this crop will speedily secure, I think an average yield of seven or eight pounds of fecula, may be safely anticipated. Bermuda arrowroot, now worth at wholesale, from 20 to 25 cents per pound, is not better in appearance

than the Florida article, and for culinary purposes is greatly inferior, as ascertained by the careful experiments of a lady every way qualified to test practically this product of the two localities. Other advantages, connected with the cultivation of this crop, are found in the capacity of the plant to bear up against drought or excess of rain, its exemption from the ravages of insects, the protracted season of three months or more, during which it may be prepared for market, and finally its diminutive bulk, as compared with its value, or with other crops, with the exception of tobacco.

Having the interest of Eastern Florida at heart, especially in connection with its agricultural advancement, I regret I cannot give you more definite information on the subject of this very hastily written communication. A few months hence, when the crop near Lake Orange, in the counties of Marion and Alachua, covering some fifty acres, shall be gathered and prepared for market, I shall be able to speak more satisfactorily, as that which is now hypothesis to some extent, will then have resolved itself, I have no doubt, into facts.

In the meantime I shall be prepared to impart any information I possess, on this or kindred subjects, which may conduce in any degree to the public weal. MARION.

From the "Ancient City."

SUGAR PLANTING IN FLORIDA.

The result of the past years operations in sugar planting in Florida have demonstrated beyond question the fertility of our lands, the favorableness of our climate and the superior quality of the article produced. Two to three hogsheads per acre have been, in several instances, and upon considerable bodies of land produced. The opinion of those well qualified to judge, is, that an average of two hogsheads per acre may be relied upon, and the estimate of molasses added is stated to be 35 to $40 per acre. The favorableness of the climate may be presumed from the fact that all of East Florida is South of the sugar growing portions of Louisiana, and in fact a greater portion of it below the region of frost. The quality of the article produced depends upon the quality of the juice and its proper manufacture, when properly manufactured we have heard of no instance where an inferior quality has resulted. But we have in Florida nothing of the expensive improvements and splendid machinery of Louisiana, but with the most ordinary processes with little experience, our sugar planters are producing a good article.

We think Florida has several very decided advantages for sugar culture over any other portion of the United States. Among these may be mentioned, first, facility to market. East Florida is a Peninsula averaging about one hundred miles in

width, with lateral rivers running towards the Atlantic and Gulf coast, and is again intersected north and south by the St. Johns and Suwanee Rivers. Very large bodies of land suitable for sugar culture lie immediately upon tide water and along the coast where the crop may be shipped from the mill.

The Texas Sugar planter has to contend against great difficulties in getting his crop to market, while neither Cuba nor Louisiana are more favorably situated in this respect than Florida.

An important item in the expense of sugar manufacture is fuel. In Cuba this is an important and very expensive item, and in Louisiana, we see it stated, the cost of wood for one crop of six hundred hogsheads of sugar is six thousand five hundred and twenty dollars, ($6,520,) while in Florida we doubt whether the expense would be $1000. In Texas, we understand, the want of fuel is a great obstacle to the employment of steam machinery at all.

Another important difference in favor of Florida is its tropical climate and the absence of rainy seasons. During the past winter there has been no frost south of St. Augustine. Frosts seldom if ever occur before the 20th November, and the first frosts are usually slight. The growing season for the maturity of the cane is, therefore, much larger than in Louisiana or Texas.

There is no danger of the sugar market being overstocked, and the improvements being made in the manufacture of white sugars, enable a larger portion of the stock to remain on hand uninjured from season to season. Being of universal use, unlike cotton, it cannot be controlled or depressed by a combination of buyers or manufacturers, and the price will, therefore, always be strictly in accordance with the demand.

Estimating that half a million of acres only out of the whole State is cultivated in sugar, and the product will exceed 500,000 hogsheads. We believe, therefore, that sugar should be preferred to all other crops in East Florida. We have not the exact data by which to estimate the past years production, but we know that it exceeds the crop of Texas.

JOURNAL OF MANUFACTURES AND IMPROVEMENTS

PRICE OF CUT NAILS.

Average prices of cut nails of American manufacture each year for fifteen years, from 1835 to 1849, inclusive. Furnished by Nahum Stetson, of Bridgewater, Massachusetts, November 1849.

1835	6 cents	From Swedes iron
1836	6 do.	do.
1837	6 do.	do.
1838	6 do.	do.
1839	6 1-8 do.	do.
1840	5 1-2 do.	do.
1841	5 1-4 do.	do.
1842	4 3-4 do.	From American iron.
1843	4 1-4 do.	do.
1844	4 1-2 do.	do.
1845	4 3-4 do.	do.
1846	4 1-2 do.	do.
1847	4 1-2 do.	do.
1848	4 1-4 do.	do.
1849	4 do.	do.

WOOD SCREWS.

The value in dollars of James' wood screws, imported into the United States each year from 1837 to 1847, inclusive, as exhibited by returns to the Treasury Department, were as follows, to wit:

1837	$145,565
1838	107,256
1839	166,567
1840	131,986
1841	138,527
1842	113,469
1843	7,551
1844	6,135
1845	17,173
1846	17,037
1847	5,466

Since 1847 none have been imported, the American market having been wholly supplied by the American article.

James' wood screws, a leading English make for many years, stood at 45 a 47 per cent. discount from list price. Under the tariff of 1842 his discount went to 57 1-2 per cent., and has

remained at that quotation ever since, though the importation has ceased, while the American article, the manufacture of which commenced in 1837, has, by home competition, been reduced from a discount of 25 per cent. from the American list to 60 per cent. discount. At that discount, and as now sold, the goods manufactured in the United States cost a price quite as low as the sterling cost in England, and are far better; of course, the whole cost of duty, freights, insurance, &c., is saved to the consumer here, as well as the profit of all the labor employed in the screw business, and also the anterior processes of drawing the rods and wire, all of which are of American stock.

By this state of things we can now ship to any port in the world at a price as low as the English from their ports, and by our better quality be sure of the preference.

We are now taking some steps to introduce our screws into England itself. Their import duty of 10 per cent., and our outward freight, we think likely will be counterbalanced by the superiority of our article.

English pins and hooks-and-eyes are both wholly shut out of market by American competition in their manufacture.

GEO. H. GRAY & CO.

BOSTON, *November* 20, 1849.

ENGLISH AND AMERICAN PRICES.

Comparative prices of English and American pins for fifteen years, furnished by Edward Cook, agent of the Home Manufacturing Company at Waterbury, Connecticut, and F. Newman, agent of American Pin Company at Poughkeepsie, New York. November, 1849.

	1835	1836.	'37.	'38	'39	'40.	'41.	'42	'43.	'44	'45.	'46.	'47.	'48	'49.
English pins, per pack, No. 4, - -	$1 12½	$1 06	90	90	85	80	80	75							
American " " " - -	1 12½	1 00	85	80	80	80	75	62½	55	50	45	42½	40	45	45
English mixed pins, per lb., - -	—	—	—	56	56	50	50	50							
American, " " - -	—	—	—	—	45	45	45	40	40	35	35	32	32	35	35

The manufacture of pins was commenced in the United States in the year 1835, but, from the prejudice of the dealers, met with little success for several years, and was in a very precarious condition till the passage of the tariff of 1842, which gave the manufacturer the home market, and stimulated the production. Until the passage of the tariff of 1842, pins were admitted free. On the passing of that tariff, many parties commenced manufacturing. Active competition sprung up, from the fact of a large home market being secured; and the price rapidly fell, till, in 1846 and 1847, it was below cost of production. Since then, pins have advanced to the same price they were in 1845, where they will probably remain. No English pins of any consequence have been imported since 1842, though an English manufacturer, who sold very largely in the United States, visited this country after the passage of the tariff of 1846, to see if he could not again obtain the market; but the American manufacturer, from the protection he had received from 1842 to 1846, had got such a hold, and made so much better an article, that he became satisfied he could not send pins to the United States. The quality of American pins is equal to any in the world, and superior to those made in most countries. They are altogether made and stuck by machinery, the head being solid and of one piece with the stem; while the bulk of those made in foreign countries have their head and stem of separate pieces of wire. Pins are made of brass wire: brass is made of copper and spelter, on both of which a duty is laid by the tariff of 1846.

MANUFACTURE OF HARDWARE IN THE UNITED STATES.

PHILADELPHIA, October 30, 1849.

SIR: I find it, thus far, impossible to procure from those most capable of furnishing it, a table of hardware and the progressive decline of prices such as I wanted. I send you the best I have obtained to this date.

I find nearly every article has a special history of its own; and frequently a very interesting history to one who is curious about the progress of American industry.

More than half the stocks of the hardware stores consist now of domestic manufactures. Most of these had their origin in New England. Some of them owe their beginning to protection, and others their continuance. In most cases, the American has driven the foreign wholly out of the market; the superiority of the domestic manufacture, in style and quality, is very striking. Our edge-tools are almost exclusively made in this country, although the steel with which they must be finished comes from England. It is impossible to show, in tabular form, in what way many of these articles owe their existence to protection. It is said that the large order given for locks, &c., on behalf of the city of Philadelphia, when the buildings on the Girard estate were erecting, gave a decided impetus to that branch of the hardware business, as the order was for the American article only, and for the best quality. It was not so once; but now, if the best is wanted, the American is asked for. In 1841 large quantities of English sad-irons were in this market, limited at 5 cents the lb. As soon as the act of 1842 was passed, several manufacturers here, who had been struggling to make them and live at 5 cents, took the whole market and reduced the price to 4 cents in 1843, and since to 3 cents. What they wanted to enable them to reduce the price was, sale of a large quantity. This is so in regard to a large number of articles.

Iron pipes, for water and gas, were sold in 1819 at $75 per ton. Their bulk and the freight, with the duty, has afforded constant protection. The price has constantly declined, thus: 1819, $75; 1822, $70; 1824, $65; 1828, $60; 1830, $55; 1840, $50; 1843, $45; 1848–'9, $40. This reduction is the effect of the fall in iron and of home competition. There was no fluctuation but the progressive decline. There was a simi-

lar decline in the price of cut-nails, after the protection given them in 1824 and 1828, from about 12 cents to from 3 1-2 to 4 1-2 per lb.

It may be safely assumed that every article of domestic manufacture, which has had a free market at home, has flourished and paid the maker a living profit, even at a constantly declining price.

The exceptions to this rule are in articles so superior in quality as to defy competition; some of these the makers keep at former prices, because they can sell them freely at those prices. In many instances prices have been voluntarily reduced for sake of increasing consumption. I do not doubt that American hardware will, in a few more years, wholly supplant the British, even if only a revenue duty were in force, or under that changeable policy which has heretofore annoyed manufacturers. There seems to be in the country a remarkable aptness for this branch of industry. Every year adds to the number of home-made articles and abridges the use of foreign. Direct and judicious protection extended to it would be repaid by a rapid increase of this industry, and a further reduction of prices.

In the table I have given the prices of 1846 and 1849. The latter are suffering prices. Consumption has now fallen off and business is languishing—even when not exposed to foreign competition. The effect of the act of 1842 is seen in the prices of 1843, and still more in 1846. The effects of the act of 1846 were not felt upon prices until the crisis of 1847 and 1848 in Great Britain.

Yours, truly, S. COLWELL.

Hon. W. M. Meredith,
Secretary of the Treasury.

PRICES OF PURE WHITE LEAD FROM 1809 TO 1845.

Philadelphia, November, 1849.

Sir: Having lately learned from my friend, I. R. Davis, of this city, that you would be glad to receive some data of articles manufactured in this country, I annex a list showing decline in the article of pure white lead manufactured by us from the commencement of our works till the period of moving over the Schuylkill. All this difference is owing, in my opinion, to a tariff of the right sort; and I think, also, that the

same result will be shown in every thing we are permitted to manufacture. Give our manufacturers a market, and our own products will be best and cheapest:

1809	$15 00	per 100 lbs.	1827	$11 50	per 100 lbs.
1810	16 00	"	1830	8 50	"
1811	16 00	"	1831	8 00	"
1812	16 00	"	1832	9 00	"
1813	20 00	"	1833	9 00	"
1814	23 25	"	1834	8 00	"
1815	23 00	"	1835	9 00	"
1816	12 00	"	1836	9 00	"
1817	12 00	"	1837	10 00	"
1818	12 00	"	1838	8 50	"
1819	13 00	"	1839	8 25	"
1820	12 50	"	1840	7 25	"
1821	12 00	"	1841	6 75	"
1822	12 00	"	1842	5 50	"
1823	12 00	"	1843	5 50	"
1824	12 00	"	1844	5 50	"
1825	12 00	"	1845	5 83	"
1826	11 50	"			

The changes in business, prices of pig lead, &c., &c., have caused some variations; but American enterprise and skill being encouraged, has produced the general decline.

Sulphuric acid or oil of vitriol, from England, used to cost us 12 cents, laid down here. The tariff of 1824 gave us a duty of 3 cents per pound, which stopped its importation, and it is now sold at 1 3-4 cent per pound.

Sulphate of iron or copperas was sold, previous to our beginning, at $7 to $8 per cwt. Our manufactures began, under encouragement, to produce it, till it is now sold at 1 1-2 to 1 3-4 cent per pound.

If time allowed, I could go on at great length enumerating similar results. Your obedient servant,

J. P. WETHERELL.

Hon. Wm. M. Meredeth, *Sec. of Treasury.*

MANUFACTURE OF CHINA AND QUEENSWARE.

We learn that Elihu H. Shepard, Esq., of this city, has formed a connexion with Frederick Woolford, of Washington county, for the manufacture of China, Queen's Ware, and other descriptions of pottery, upon an extensive scale. The point selected for carrying on their operations is in the south-eastern part of Washington county, about five miles from Caledonia, and about the same distance from the Iron mountain.

A tract of land containing 840 acres, abounding in clay of excellent quality, well wooded, and traversed by a stream affording sufficient water power for propelling the requisite machinery has been purchased; and the furnaces and building necessary for carrying on the operations are now in progress of erection. The land is to be laid off into suitable lots, and disposed of at moderate prices, to artizans, laborers and others connected with the business of manufacturing.

Though not so imposing, perhaps, as some others, yet no enterprize that has been set on foot in our State has afforded us more satisfaction: it is a branch of business calculated to give employment to a large number of operatives; it will create a home demand for a considerable portion of our agricultural products, and tend to lesson our dependence on foreign countries for an article which enters into the daily use of all classes; and one too, on which the freights and charges bear a larger proportion to the cost of production than almost any other manufactured article.

We have long admired the sagacity and patient perseverance of Mr. Woolford, who, with small means, has carried on the business for several years, apparently, more for the purpose of testing the quality of the material and of inducing others to embark in the business, than for the profits derived from his limited operations; and we rejoice that he has been so fortunate as to have enlisted Mr. Shepard in this important enterprize. The enthusiasm, perseverance and practical experience of the one, aided by the capital and sound discriminating judgment of the other, form a combination that can scarcely fail in the attainment of eminent success.

It is so rare that individuals who have accumulated large estates, especially in the west, embark in enterprizes calculated to develop or improve the resources of the country that the public spirit evinced by Mr. Shepard in this instance, stands out in bold relief, and challenges the consideration and respect of every citizen of the community.

It is calculated to connect his name with the history of the State and transmit it to posterity, by whom he will be justly regarded as a public benefactor. There is a completeness and beauty, in the life and career of an individual who, after having inriched himself by an honorable course of industry, appropriates a portion of his wealth to objects calculated to promote the public welfare; and whether men labor for the good opinion and respect of others, or for the benefit of their offspring the most certain, and we may say, the only way through which these ends can be obtained, is, by appropriating a portion of their means and talents to the improvement of the social condition of their country.

OHIO AND GREEN RIVER RAIL ROAD.

We have long regarded the lower section of the Ohio River, and more especially the central portion of this section, as presenting the best locations for manufacturing towns, that can be found in the great basin of the Mississippi; and yet, perhaps, no part of the country bordering on that great river, has been so much neglected, by men of capital and enterprise.

Recently, however, it has attracted the attention of some of the most enterprising and talented business men of the west; and Bon Harbor in Kentucky, and Cannelton, in Indiana, points that have been so long overlooked, have been selected as sites for great manufacturing cities; each affording advantages which, all things considered, are not surpassed, perhaps, by any other points in the United States.

A spirited movement has recently taken place, on the part of the citizens of Kentucky, towards the construction of a Railroad from Bon Harbor or Owensborough, in the direction of Nashville, with the view of ultimately forming a connection with the great line of Railway to Charleston; and for the purpose of showing the importance of this connection, we have made the following extracts from an address upon this subject delivered by Robert Triplett, Esq., the enterprising founder, as we believe, of the town of Bon Harbor. We should have been pleased could we have published the entire address, but we find it too long for our space at present, and, therefore, omitting the details in regard to the probable cost of the work, and such portions of the address as may be regarded as local, we have selected that part only which relates to the connection of the Ohio and Green River Railroad with the great thoroughfares of the South-eastern States, and with the system of internal improvements North and West of the Ohio River:

"But while I have dwelt so emphatically on the benefits to be derived from commanding the trade of Green river, let us see what is to be the effect of making ours the terminus of the Charleston railroad; a road six or seven hundred miles in extent, and which will afford the quickest and most convenient conveyance from the southern States, (not on the Mississippi,) to all the West.

For just below us is Evansville, to which point is now constructing a canal to the Wabash—and soon railroads will connect it with the great Cincinnati and St. Louis railroad, from which branches will go to every quarter of the West which is not reached by the Ohio and Mississippi rivers. Evansville and Owensboro' will be the two grand termini of trade and travel on the two opposite sides of the Ohio: the first commanding the commerce of the Wabash and its tributaries, and

the travel from the great base line railroad aforesaid, destined for the great Southern Atlantic States; the second the commerce of Green River and its tributaries, and the travel from the great Atlantic railroad, destined for the West; and these two termini are hardly two hours run of a fast boat apart. A reular ferry boat between them would make the great line complete.

"By observing the map of the United States, you will see that Owensboro' is about as near by an air line to Charleston as any other point on the Ohio. Nashville, to be sure, seems to be out of the line—too much to the left, or west. But even by way of Nashville, Owensboro' is the most accessible point. But Virginia has lately taken up the project of extending a railroad from Lynchburg to Tennessee, and will doubtless connect with Nashville, or with Knoxville, from which place a road is in progress, I understand, to Nashville. This completed, then we will be in direct connection with Richmond and Charleston, and could, at rates of travel now common in the northern States, reach either point in thirty hours. Only think of it! Some will say, this will draw the trade from us. If it drew some which was East from us, it would draw more which was West, to us. Owensboro' is not going to be the dividing point. But here will concentrate all the product of Indiana, Illinois, and Missouri, which will bear carriage to Richmond or Charleston, and that may be a great quantity.

"But look at the travel. With this road completed, what merchant destined from the Mississippi Valley below Louisville, would think of going by Wheeling, when he could be in New York by way of Nashville and Richmond before he could get to Wheeling? If you will examine the map, you will see that this is the fact. To the eye, it may seem that there is a much more direct route. But the direct route is impracticable on account of the mountains. I, myself have traveled often on horse back from Frankfort to Richmond; sometimes by Guyandotte, but most generally by the Cumberland Gap, going even from Frankfort as far south as Tennessee, and not over fifty miles from Knoxville; of course then, this route would be the most direct practicable one. Virginia then, with this railroad finished, would straddle the West: standing with one foot on the Ohio at Guyandotte, and the other on the Ohio at Owensboro'. Viewing the geographical position, it seems as if nature designed the products of the West to reach the Atlantic by the capes of Virginia, and yet States that have to come half round her, to reach this Western harvest of wealth are taking it from her. So much is it to our interest to have this trade carried on by Owensboro' and Nashville to Richmond, that I think we must endeavor to awaken our glorious old mother, to a sense of her interest on this subject. While

low water in summer and ice in winter, will obstruct the navigation to Guyandotte, no such difficulties, or in a small degree, comparatively, will interfere with Owensboro'. Let this subject be examined, and it will be seen there is nothing visionary in the plan. Let us then begin the work, if we but plant the acorn, and let us adopt the emblem—

'An acorn now, an oak hereafter.'"

MOBILE AND OHIO RAILROAD.

We are indebted to the Hon. John M. Krum for a copy of the proceedings of the second annual meeting of the stockholders of this company, to which is added the report of John Childe, Esq., chief engineer. This is one of the few works of this age of enterprize, the importance of which has not been overated; nor would it be prudent, perhaps, for one who regarded his reputation as a man of sound judgment to predict the future value of the stock, or the influence which the improvement is calculated to exert over the commerce of the valley of the Mississippi.

It must, we think, through all time, be the principal line of railway connection between the Gulf of Mexico and the more northern States of this great valley, and to say nothing of the benefits of the work to the country through which it passes, this fact, of itself, gives to it an importance which no other line of railway yet proposed, east of the Rocky Mountains possesses; and we rejoice that the company have commenced this great enterprise with an earnestness that promises success.

Seventy miles have been put under contract, and we understand that the work is actively progressing. From Buckatunna distant 79 6-10 miles from Mobile three lines are proposed to the Ohio, from each of which a branch is proposed to the Tennessee River. We extract the following tables showing the distance and cost of each line.

	No. 1 or Hashuqua Line.	*No. 2, or continued "B" and "L"*	*No. 3, or Sowashee Line Eastern Line.*
Total length—Mobile to Ohio River,	431,675 miles	493 057 miles	499,511 miles
Length of Tennessee River Branch,	23,030 "	23,030 "	23,030 "
Total length of Road and Branch,	514 705-1000	516 087-1000	522 541-1000
By substituting the line via Chambers Creek, the Tennessee River and Snake Creek, for that via Huggin's Creek — thus dispensing with a Branch Road—the total length of Road will be	503 155-1000	504 537-1000	510 991-1000
Estimated cost, Mobile to Buckatunna,	$1,200,000	$1,200,000	$1,200,000
" " Buckatunna to Ohio River,	7,735,818	7,917,130	8,052,568
" " Of Tennessee Rivier Branch,	448,072	448,072	448,072
Totals,	$9,383,890	$9,565,202	$9,700,680
Or average cost per mile in complete working order,	$18,931 ¼	$18,534¼	$18,566
By substituting the line via Chambers Creek, the Tennessee River and Snake Creek, for that via Huggin's Creek—thus dispensing with Branch Road—the total estimated cost will be,	$9,220,313	$9,401,624	$9,537,009

That you may know what proportion of this estimate is for local labor and expenditure and how much for foreign, I annex the following division of the work upon line No. 3, which is most expensive :

LOCAL EXPENDITURES.		Totals	Av. pr mile.
For Grading, Masonry, and Fencing,	52½ miles.	$3,309,361	$6,333 70
" Depot, Buildings, and Fixtures,	" "	349 940	671 65
" Depot, Lands, and right of way,	" "	122,2 6	234 02
" Timber, and laying the Tracks,	" "	989 800	1,894 35
" Engineering, superintendance and Contingencies,		380,487	728 20
Total Local Expenditure,		$5,151 864	$9 861 91

FOREIGN EXPENDITURES.		Totals.	Av. pr mile.
For Rail Bars, for 522½ miles,	$3,311,838		$6,338 38
" Chairs and Spikes,	230 955		441 60
" Engines, Cars, and Furniture	1 000 948		1,918 10
Total Foreign Expenditure,		$4,543,716	8,703 08
Total Cost,		$9 700 580	$ 8 565 00

"Could the means be provided, however, for building the whole road in six years, all the Chains, Engines and Cars might with economy be manufactured at Mobile and other favorable points on the line of the road. The quantity of this description of work and the future demand for other connecting roads will fully justify the erection of a factory for the purpose. In fact the permanent repair shops of the Company could be used wholly in this way at the commencement of the equipment, and partly thereafter until completed."

We commend the policy of manufacturing the engines, cars, &c., at some suitable point on the road, as suggested by the Engineer, and should be pleased to see it adopted by every company in the South and West, we in this region, should not be dependent on the Eastern States for the machinery necessary for transporting our produce and merchandize upon our own works of impprovement. The Engineer's report contains much valuable information, and is highly creditable to him as a man of science.

MISCELLANEOUS.

STEAMBOAT NAVIGATION ABOVE THE FALLS OF ST. ANTHONY.

The experiment has fully succeeded. Another link is added to the chain of navigable waters in the Great Valley of the West. The geographer of the last year stated, that the Mississippi was navigable for Steamboats from the Balize to the mouth of the Minnesota or St. Peter's river, a distance of 2,200 miles. In his next addition, he must add another hundred miles, from the Falls of St. Anthony to Sauk Rapids.

He may also be more minute, and encroach slightly upon the grounds of the historian, by stating that during the winter of 1849–50, a few enterprising citizens of Minnesota, aided by some gentlemen of means, residing at Bangor, Maine, built at the Falls of St. Anthony, a light draught steamer, which they named in honor of our worthy and deservedly popular executive, Governor Ramsey; that on the 25th day of May, 1850, the Ramsey left the Falls on her first trip to Sauk Rapids, freighted, in addition to the good wishes and high hopes of the Minnesotians, with a full cargo of pork, flour, groceries, dry goods, &c.; ane that she fully succeeded in reaching her point of destination, and returned the next day without hindrance or accident. She is now making her three trips per week, going up one day and returning the next.

A feat of travel was performed by two of our citizens last week, which though nothing when aided by the facilities of steam navigation, is, nevertheless, worth mentioning, as being probably the first act of the kind ever done by white men. They left St. Paul at five o'clock in the morning; embarked on the Gov. Ramsay an hour afterwards; passed the night at Sauk Rapids; left the next day at eleven o'clock, and were home in about thirty-six hours from the time they left. This can be done by any one who desires to visit the "upper country" on business or pleasure.

Persons who have been over this newly opened section of the Mississippi, are in raptures with the country. The scenery is grand beyond comparison, and the appearance of the country for agricultural purposes on both sides of the river, is far better than was supposed. There is also a much greater quantity and better quality of heavy timber than below the Falls. But we will forego any minute description of the country until we examine it personally.

The "Upper Mississippi" is now above the Falls of St. Anthony. Its reclamation from the bark canoe of the red man, by the appearance of the Steamboat, marks an era in the history of the North-West.—*St. Paul Chron.*

IMPROVEMENT IN MAKING FLOUR.

Mr. D. P. Bonall, of Tecumseh, Michigan, has recently made an improvement in the process of manufacturing Flour, which is claimed to be valuable. The Indiana State Journal publishes the following extracts from a letter written by Mr. B. in reply to inquiries made of him in reference to the improvement.

My "improved process of milling" consists in separating the starch part of the wheat from the glutinous matter, and submitting the latter to a second grinding. The way it is

effected is by placing an auxiliary run of stones so as to receive the entire body of the "offal" on its passage from the upper or first merchant bolts. The stones are fitted to run from 300 to 400 revolutions per minute, and the feeding of the stuffs made uniform and perfect by a very simple combination of machinery.

After the "offal" is thus ground or severely scoured, it is then passed into the lower bolts, or dusters, when the flour is taken out and sent to the "cooler," or first bolts, to he uniformly mixed in regular proportions, with the superfine flour, and the remainder separated for the feeds. The advantage obtained by this mode of grinding, is as follows:—First, it enables the miller to grind light or coarse, at the first grinding, and thus avoid injury to the "starchy" portion of the wheat, and insures free, good bolting, which is not always the case, when attempting to grind the starch and "gluten" contained in the grain to the same consistency by one process, as the starch, which pulverizes easy, is apt to be too fine, and stick to the bolts, or else the "farina" is too coarse and goes to middlings, or adheres to the bran and is lost.

Second, It enables the miller to grind wet or damp wheat better than by any other mode, as first grinding, which is high and free, warms the wheat, when by elevating, cooling, airing and bolting, the moisture is principally evaporated, and the 'offal' is partially kiln-dried, when by submitting it to the quick grinding, or scouring process, the flour is almost entirely "whipped out" and put into the superfine barrel.

Third, It catches all the broken particles of grain that escapes the first grinding, by stopping and starting, or from other causes, and equalizes the grinding, when any variations occur in the first mills or grinding.

Fourthly, It adds to the superfine flour that which was formerly "fine" and thus saves the loss on sales in market.

Fifthly, It saves grinding middlings, as the whole middling process is done by continuous operation, with a great saving of labor as well as time.

Sixthly, It enables the miller to make his barrel of superfine flour from four bushels of wheat that will weigh 60 lbs, to the bushel, and the flour is much better, as it contains much more of the "farina" of the wheat, or glutinous matter, and will yield more bread from a given quantity of flour. Flour ground on this process is now selling in Buffalo as a superior brand.

The double grinding evaporates more of the moisture, and has a tendency to preserve the flour longer from souring.

These are the principal and distinguishing characteristics of my "improvement," and if time permitted I would write you more specific and in detail. The aggregate saving made by it will be somewhere from 15 to 25 lbs. of wheat on each

barrel of flour. It is simple and durable, and all the economies it combines, and principles it involves, are well understood by all common sense minds, and must be appreciated.

Cist's Advertiser.

UNIVERSITY OF THE STATE OF MISSOURI.

We have received the eighth annual catalogue of the officers and students of this institution, from which we make the following extracts:

Curators —Caleb S. Stone, President, Boone county; T. R. H. Smith, M. D., Secretary, Columbia; Wm. H. Duncan, M. D., Treasurer, do.; James L. Mathews. do.; Alton Long, St. Louis county; W. J. McElhany, St. Charles county; R. Brown, Cape Girardeau county; W. D. McCracken, St Frangois county; Asa Ellis, Texas county; J. A. Brown, Benton county; H. C. Dunn, Morgan county; Francis R. Palmer, Jackson county; Charles J. Hughes, Caldwell county; John Corby, Buchanan county; James A Clark, Chariton county; Addison M. Lewis, Howard county; James Ellison, Lewis county; Wm. C. Jones, Newton county.

Faculty.—Rev. James Shannon, A. M., President elect and professor of Law, Ethics and History; William W. Hudson, A. M., President ad interim, and professor of Mathematics, Natural Philosophy and Astronomy; Edward H. Leffingwell, A. M., professor of Chemistry, Mineralogy and Geology; Richard F. Barrett, M. D., professor of Physiology and Materia Medica; Joseph N. McDowell, M. D., professor of Anatomy and Surgery; John S. Moore, M. D., professor of Theory and Practice of Medicine; ——————, professor of Obstetrics and Diseases of Women and Children; Robert S. Thomas, A. M., professor of Metaphysics, Rhetoric and Logic; George H. Matthews, A. M., professor of Ancient Languages; John B. Thompson, M. D., professor of Pathology and Clinical Medicine; ——————, professor of Medical Chemistry and Pharmacy; Robert A. Grant, A. M., Tutor of Mathematics; William C. Shields, A. B., Tutor of Languages; J. S. Moore, M. D., Dean of Medical Faculty; John T. Hodgen, M. D., Demonstrator of Anatomy; R. S. Thomas, A. M., Librarian.

Medical Students—154; Seniors—6; Juniors—13; Sophomores—10; Freshmen—21; Preparatory Department—30; Undergraduates—80; Total 234.

Expenses of the Session.—Tuition Fee—$20; Contingent Fee—1$; Board in private families, with washing, lodging, fuel and lights, at $2 per week, (average)—$84; Total, $105.

M. PAWLEY. H. B. HAWKINS

PAWLEY & HAWKINS,

MANUFACTURERS OF FIRE PROOF VAULTS, Safes, Iron Window Shutters and Doors, cast and wrought iron Railings, and all kinds of ornamental iron work. Also, heaters for public and private buildings

In the manufacture of Iron Railing, either wrought or cast, over five hundred designs in their possession may be examined, embracing all the most beautiful patterns of the eastern countries, public and private buildings.

Every article in their line, made with despatch; and warranted equal to any manufactured in the United States. No. 41 Third street, St. Louis, Mo.

Doan, King & Co.,

WHOLESALE Dry Goods dealers, 131 and 133, Main street, St. Louis. Job P. Doan, St. Louis. Wylley King, do., Richard Bigelow, New York.

Edward Mead,

IMPORTER and wholesale and retail dealer in watches, jewelry, cutlery, guns, pistols and fancy goods, No. 83, north Fourth street, first block north of Planters' House, east side, St. Louis, Mo

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Crow, McCreery & Co.,

WHOLESALE dealers in Dry Goods, No. 71 Main street, St. Louis, Mo. Wayman Crow, Phoceon R. McCreery, Wm. H. Barksdale, Wm A. Hargudine, Chas. D Appleton.

Woods, Christy & Co.,

WHOLESALE dealers in Dry Goods, No. 75 Main street, St. Louis, Mo. James Woods, William T. Christy, James C. Christy, Robert K. Woods.

Protect Your Property.

HAVING made an important improvement in the application of Blake's Slate Paint, for which I am obtaining Letters Patent, I am prepared to do any amount of work, in the roofing line, or to furnish any person with the slate, in sheets or rolls, containing from 2 to 600 feet in a roll; and any person can lay it over his roof himself. Farmers and merchants can have their warehouses, barns and dwellings rendered perfectly fire proof by this means. I charge $5 50 per square of 100 feet in building, nearly one fourth of the entire cost may be saved by having the roofs flat. The gable walls and steep roof being dispensed with if thought best; thus making the cost of a roof of my slate less than even shingles; and one half less than Welsh slate, or iron. I can do work for persons out of the city if desirable, provided the distance is not too great from the rivers. Persons wishing to embark in the roofing business, can buy the right to any territory they wish, at low rates; and are sure to make money if they are industrious. I am prepared to fill all orders that may present for doors, sash, blinds, flooring, &c., at lower rates than any one in the west. No order will be filled without the cash. Any particular form of sash or doors made to order. Manufacturers, as usual, supplied with any kind of machinery. Patents secured. Engraving done.

Blake's slate paint always on hand, in any quantity. Letters, post paid will be attended to. No 65 Locust street, St. Louis, Mo.

JOSEPH E. WARE.

Washington Foundry.

CORNER of Second and Morgan streets, St Louis, Mo. We are prepared to fill with dispatch, and to fit up in superior style, all orders in the Foundry and Machine business, such as steam engines, mill work, mill castings, railroad cars, wheels for coal trucks, lard and soap kettles of all sizes, press screws, &c, made to order at short notice Wool carding machines, shearing machines, and a large and superior stock of machine cards, which we warrant equal to any in the Union.

All orders from the country will meet with prompt attention

J. T. DOWDALL & CO.

EDSON E. BRIDGE. HARRISON P. BRIDGE.

BRIDGE & BROTHER,

No. 158 Main Street, St. Louis, Mo.,

MANUFACTURERS of Pierce's Patent "American Air-Tight," "Empire" and "Victory" Premium Cooking Stoves, and every variety of Wood and Coal heating Stoves, dealers in Tin Plate, Copper, Sheet Iron, Iron Wire, Tinners' Tools, Machines, also, manufacturers of Jewett's Improved Patent Cary Ploughs.

J. BLAPPNER,

MATHEMATICAL and Surgical Instrument maker, Dealer in Guns, Pistols and Sporting Materials. No 68 North Second Street, between Pine and Olive, St. Louis, Mo., Manufactures and has always on hand; Surveyors Compasses and Chains, Levelling Instruments, Theodolite Pocket Compasses, Spy-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Micro-copes and Magnifying Glasses, Hydrometers of silver and glass, Hydrometers for acids and salts, Magic Lanthorns, Electrical Machines, &c., also-- Surgical and Dental Instruments; Pocket, Dissecting, Cupping and Self-injecting Cases; Taylor's Shears, all sizes, Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; Large Scales and Weights, for Druggists; Prescription Scales on Stands; Revolver, Guns, Pistols, Powder Flasks, Game Bags, &c., ☞All the above Instruments repaired at short notice in the best manner.

CHARLES T. WILGUS. JOHN S. WATSON.

WILGUS & WATSON,

HOUSE, Sign, Steamboat & Ornamental Painters, Glazers, Paper Hangers, Whiteners and Wall Colorers, No. 52 and 54 Pine Street, Saint Louis. Also, Dealers in American and French Paper Hangings, in great variety and of superior quality; White Lead, Oil, Turpentine, Varnishes, Window Glass, Putty, and every variety of Paints, wholesale and retail.

WILSON & BROTHERS,

WHOLESALE DEALERS IN HARDWARE, corner of Main and Olive streets, St. Louis, Mo.

C. BENEDICT, Danbury, Conn. D. PEARCE, St. Louis, Mo.

DAVID PEARCE, & CO.,

MANUFACTURERS and wholesale dealers in Hats, Caps and Straw Goods, No. 120 Main street, St. Louis, Mo.

HEWITT & STEINACKER,

SADDLE, Harness and Trunk Manufacturers, wholesale and retail, No. 67 Fourth street, corner of Pine, opposite the Planters House, St. Louis, Mo.

M. B. COX. WM. M. SIMPSON. GEO. BURNET, Jr

M. B. COX & CO.,

WHOLESALE dealers in Boots and Shoes, Shoe Findings, Hats, Caps and Bonnets, Artificial Flowers, Umbrellas and Parasols, Pongee and other Silk Handkerchiefs, Hosiery and Gloves, Trimmings, Small Wares, and Variety Goods, No 91 Main street, east side, between Locust and Olive, St. Louis, Mo.

J. A. ROSS,

SCALE AND SPUR Factory, Brass Foundry and Machine Shop, 202 north Second street, between Morgan and Cherry sts., St. Louis, Mo. Constant'l on hand and manufactured to order, Platform Scales of all sizes, Counter and Druggist Scales, Flour, Floor, Hay and Car Scales. Also, Beam Scales, of Iron or Brass. Scales repaired with neatness and despatch. Spurs, for Dragoons and others, and Brass Castings furnished on short notice.

P. WONDERLY,

MANUFACTURER of Copper, Tin and Sheet Iron Work—such as Copper Pipes for Steamboats and Distilleries, Soda Fountains, Copper Kettles, Well and Cistern Pumps, and every other article in his line of business; No. 233 Main street, south east corner of Cherry, St. Louis, Mo. He also manufactures and keeps constantly on hand, Premium Steamboat Cooking Stoves. Tinware always on hand, wholesale and retail.

Saint Louis Furniture Store,

WM M. HARLOW, proprietor. Manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, willow ware, &c , &c.

Also, manufactures to order every article in his line. with despatch. Orders from abroad promp ly attended to, and goods carefully packed. All goods warranted. as recommended

New Warehouse, No. 88 Second street, between Olive and Locust streets, St Louis, Mo.

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ARCHIBALD YOUNG & CO., 99 Main street, St. Louis, Mo. Wanzer Minor & Co . 126 Pearl s reet, New Yo ik, Moses Wanzer and Henry J. Minor, New York. Archibald Young St. Louis.

N B —We manufacture all of our own goods, and sell at the lowest possible prices.

ROLLIN CLARK. } JOHN RENFREW, } { PHILANDER BRALEY, { ALEXANDER CR SIER.

Eagle Foundry and Engine Shop.

NORTH west corner of Main and Biddle streets. Manufacturers of all kinds of machinery, boilers and sheet iron work, por a le circular saw mills always on hand, all orders executed wi h fidelity and despatch.

A splendid fortune may be gained by an outlay of £10 or £5.

Metropolitan Portrait Club.

Offices—88, Albany road, London, England.

THE Directors beg to announce that there will be drawn for a grand series of por'raits of all horses entered for the forthcoming Great Derby Race.

The drawing will be conducted upon those honorable principles which have hitherto given so grea satisfaction, and secured to the ab v a sociation such extenstve patronage; and that while the past success and high estimation in which the club is held are s bjects of pleasing congratulation to he projectors they encourage endeavors for a still further development of their plan. For the future, therefore, the number of pr zes will be extended to the portraits of all horses that are entered for each particular race —Non-starters as well as winners and starters. The following list is now open:

5,000 members to each class. First class £10, second do. £5, third do £1.

Parties can have one or more shares in each or either of the different classes.

hose members who draw the portraits of first, second, and third horses, the o'her starting horses, also those that do not start (but which are entered for the race), will rec-ive the following prizes. The drawing will take place ten days before the races.

	Portrait of first horse.	Do. Second do.	Do. Third do.	Divi'ed am'gst the portr its of Starters.	Do. Do. non starters
First class	£20 000	£10,000	£5,000	£5,000	£10 000
Second do	10,000	5,000	2.500	2,500	5,000
Third do.	2,000	1,000	500	500	1.000

The number of pr zes to be distributed in each class are 209, that being the number of horses entered for he race. All let ers to contain a remittance drafts, bank-notes, &c., addressed and made payable to 'he managing director

JOHN BURRIDGE, Esq . 88. Albany Road, London. England.

Numbers forwarded immediately on receipt of a remittance. Full part'cular of the race will be sent with the fortunate numbers to each subs riber. so that he may know his position and whether or not he be one of the fortunate. Office commission 7 1-2 per cent.. to be deducted from the above prizes.

N. B.—Lists open for theSt. Leger same as the above.

Great Western Clothing Emporium!

WHOLESALE AND RETAIL,

No. 124 *and* 126 *Second street, corner of Vine.*

W. L. & J. BIGELOW & Co., St. Louis, Mo.

BAKER, NELSON & Co , 51 Cedar street, New York.

Fallon & Wright,

CARRIAGE manufacturers and dealers, No. 90, Fifth street, between St. Charles and Locust, are constantly manufacturing, and have on hand, all styles of carriages. which they will sell on the most reasonable terms They flatter themselves from the experience they have had in the business. to be able to furnish as good an article as can be bought in any market. Citizens and strangers are requested to call and examine for themselves. All carriages made by us are warranted to be as represented, or the money refunded. WESLEY FALLON,
JAS. A. WRIGHT.

John Mullery,

PREMIUM Horse Shoer, in the alley, opposite the Post Office, will as usual pay particular attention to the various diseases affecting the feet of horses, and will guarantee to give general satisfaction in either of the above departments.

Fruit Trees and Shrubbery,

For sale by JOHN SIGERSON & BROTHERS, at their fruit farm and nursery. This establishment is located seven miles South of St. Louis, Mo. There are Omnibus Coaches running daily from the City within one half mile of the establishment The Nursery and Gardens are open at all times (Sundays excepted) for the reception of visitors. Horticulturists and Amateurs are respectfully invited to visit the establishment and examine for themselves. In directing the attention of the public to their nursery, they would remark that one of the firm, (Mr. James Sigerson,) has been engaged in the above business for the last twenty five years; during that time he has tested many of the varieties now growing. This, with the assurance on their part of an intention to increase the number of their trees, as well as to add to their assortment from year to year, furnishes a strong guarantee to persons wishing to make choice selections of fruit, that they can always be supplied. The prices for trees will be as reasonable as at any similar establishment East or West, and when desired, trees will be delivered free of charge in the city or on steamboats; packed in good order for their destination.

☞All letters addressed to John Sigerson, St. Louis, or to James Sigerson, Carondolet, will meet with prompt attention.

JOHN SIGERSON & BROS.

J. BUNDING. B. VOIGT.

Bunding & Voigt.

WHOLESALE dealers in drugs, chemicals, paints, oils, dye-stuffs, window glass, glass-ware, &c., &c. No. 100 Main street St. Louis, Mo.

P. Hayden,

(SUCCESSOR TO P. WILSON & CO)

IMPORTER and manufacturer of saddlery, hardware, carriage trimmings, saddle trees, hog skins. skirting, harness and bridle leather. wood and iron hames, &c. 47 Second street, (east side. between Pine and Olive streets,) St. Louis, Mo. Manufacturing the greater portion of the articles in my line. and importing the remainder, my advantages are superior to *any house in the trade.*

GLOVE & CAMPBELL,

Late of Palmyra, Mo., Attorneys at Law,

SAINT LOUIS.

John C. Meyer,

Dealer in Hides, Leather, Oil and Findings,

No. 88 North Main Street, St. Louis.

H. W. LEFFINGWELL, Notary Public. R. S ELLIOTT, Com'r of Deeds.

Leffingwell & Elliott,

REAL ESTATE Dealers. Auctioneers and Conveyancers, No. 123 Chesnut street St. Louis, Mo. Real Estate sold on comm ssion, at private sale, or auction Also, Deeds of all ki ds written, and acknowledgments taken. Maps of the city and additions, to be seen at the office, and information given free of charge. Surveying done promptly and correc ly

Charless & Blow,

NO 70 and 72, Exchange Building, St. Louis, Mo., Impor'ers and dealers in drugs, med cines, oils, paints, dye stuffs, perfumeries, window glass, glassware, &c.

O. W. Jerome,

WH'LESALE and retail dealer and manufacturer of Cabinet Furni'ure, chairs, bedsteads, &c., Nos. 44, 46 and 48, Olive street, opposite the Monroe House, St. Louis, Mo.

Sligo Book Store and Paper Warehouse.

AMOS H. SHULTZ, No 136, north Main street St. Lou s, opposite the Bank. Wholesale dealer in books, paper and stationery.

THE unders gned takes the liberty of informing you that he has removed his place of business to Olive street, a few doors above Main, south side, in the Exchange Building, and three doors above Messrs. E. W. Clarke & Co.'s Banking House, where he is now opening, and will continue to receive during the Spring months, a large and full assortment of the most

Fashionable Styles of Goods,

In his line, for gentlemen's wear; and where he w ll be pleased to see his old friends and customers, and their friends w th them; and assures those who may favor him with their patronage, that they shall receive his personal attention, and his best efforts to please Very respectfully, your ob't servant,

J. G SHELTON.

Giles F. Filley,

MANUFACTURER of the celebrated prize premium cooking stoves; also, Irving's air tight cooking stoves, fancy parlor stoves, fancy box and coal stoves; dealer in tin pla e, copper, sheet iron, block tin, rivets, tinner's tools, machines, &c. Warehouse No 163 north Main s reet, St. Louis, Mo Foundry on Lewis street, near the water works.

TOBACCO.

T. MULLEN, Tobacco Comm'ssion Merchant, 21 Washing'on Avenue, St. Louis, Mo for the sale of Cuba and Havanna Tobacco; also, for Virginia manufactured tobacco, for which he has the agency.

J. HENWOOD,

Hat Manufacturer, 72 Chesnut Street, St. Louis, Mo.

Missouri State Mutual Insurance Company.

DIRECTORS:—John O'Fallon, C. M. Valleau, Reuben Knox, Daniel D. Page, Oliver Bennett, John Sigerson, John S. McCune, Joseph A. Eddy, True W. Hoit.

This company is established upon the mutual principles of insurance, and is emphatically a home institution. The fire risks of this company are extended into all parts of this State. Its earnings are never employed or invested in stocks or real estate, but kept for the prompt liquidation of losses, and under the immediate control of the Directors. Every person insuring with this company becomes interested in its success, and its profits instead of being divided among a few stockholders, belong to those who insure in this company.

The Directors aware of the importance of a well secured fund, reliable in case of loss, and amplen der all ordinary calamity, assure the public that they have already apledged fund ample and reliable for any contingency, with a monthly increase of premiums of over ten thousand dollars. For the length of time this company has been in operation (six months) its business has been extended into all parts of the State and the city, and has received from the public a liberal patronage, which has placed it upon a permanent basis.

By an act incorporating this company, the parties insuring property therein, are entitled to the entire profits of the institution, the premium notes are also pledged by the charter for the payment of losses.

The portfolio of the company is at all times open to the inspection of its members and those wishing to make insurance with it. Policies are issued from thirty days to six years, thereby effecting a permanent insurance, with a return premium of from fifteen to fifty per cent, according to the term of insurance.

Agents for this company, may be found in all the principal towns in the State to whom applications may be made.

Office of the company over E. W. Clark & Bro., corner Main and Olive streets, Exchange building, where insurance will be effected at the tariff rates of premium.

C. M. VALLEAU, President,

H. D. BACON, Treasurer.

S. F. LEDYARD, Secretary.

Home Mutual Fire and Marine Insurance Company of St. Louis.

NOTWITHSTANDING the heavy loss sustained by this company in May last the stock notes now on hand amount to $350,000. The stock notes of the company are secured by lien upon real estate and approved endorsers. Office, No. 120 North Third street.

Directors:—I. L. Garrison, A. P. Ladew, P. Salisbury, Jno. Whitehill, Jos. A. Eddy, Henry Kayser, D. D. Page, Theron Barnum, John Kern.

ISAAC L. GARRISON President,

DD. PAGE, Treasurer,

PHILANDER SALISBURY, Secretary.

JOHN D. M'MURRAY JAMES M. DORMAN

M'MURRAY & DORMAN,

IRON RAILING MANUFACTORY corner of Third and Pine Streets, continue to manufacture at the above establishment, all kinds of Plain and Ornamental Iron Railing, Balconies, Bank and Jail Doors, Book Safes, Fire-Vaults, Iron Window Shutters, Iron Awnings, Lightning Rods, Bedsteads, Gratings, and in fact, any thing which can be formed of Iron.

BURD, RUCKER & CO.,

No. 45 Main Street, St. Louis Missouri,

MANUFACTURERS of Copper, Tin and Sheet Iron Ware, Lead Pipe, Sheet Lead, Bells weighing from 20 to 400 pounds, Brass Castings, Beer and Soda pumps, and general Stove Dealers.

WESTERN BANK NOTE,

Card, Seal, and General Engraving Office,

No. 25 Chesnut Street, nearly opposite the Republican Office,

BANK NOTES, Bills of Exchange, Bill Heads, Diplomas, Business, Professional, Visiting Wedding and other Cards,; Notarial, County, Odd Fellows, Sons of Temperance, Masonic and Probate Seals: Wood Cuts, Xylographic Plates, Stencil Brands, Jewelry, Silver Ware, &c., engraved in a superior manner by

R. L. CAMPBELL.

N. B. Druggists' Lables, of every description, engraved and printed.

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ATTORNEY AND COUNSELLOR AT LAW,

No. 97 Chesnut Street, St. Louis,

(TWO DOORS WEST OF THE POST OFFICE.)

T. F. RISK,

ATTORNEY AND COUNSELLOR AT LAW,

Office—No. 97 Chesnut street,

St. Louis, Mo.

CHARLES & HAMMOND,

BOOK AND JOB PRINTERS,

Chesnut Street,

St. Louis Mo.

THE WESTERN JOURNAL,

PUBLISHED MONTHLY.

DEVOTED TO

AGRICULTURE, MANUFACTURES, MECHANIC ARTS, INTERNAL IMPROVEMENT, COMMERCE, AND GENERAL LITERATURE.

M. TARVER & T. F. RISK, Editors and Proprietors.

TERMS—THREE DOLLARS PER ANNUM, IN ADVANCE.

PUBLICATION OFFICE:

No. 97, CHESNUT STREET, 2 doors West of the Post Office.

THE WESTERN JOURNAL is designed to embrace every subject connected with Agriculture, Commerce, Manufactures, Mechanic Arts, Mines, and Internal Improvement.

A portion of the work will be appropriated to Statistics, which will be collected and arranged with reference to the leading subjects contained in the respective numbers.

The development of the vast resources of the valley of the Mississippi, and the improvement of the intellectual and social condition of its inhabitants, will be constantly kept in view; and the leading article of each number will be devoted to the advancement of these objects. In attempting to illustrate and give direction to the economy connected with the leading pursuits of the country, the Editors have undertaken more than has been done, or proposed by any other journal with which they are acquainted. And it is by their labors in this department, mainly, that they expect to make the work useful.

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THE

WESTERN JOURNAL.

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ART. I.—THE PUBLIC LANDS.

The report recently made by the Committee of Agriculture to the House of Representatives in Congress, has induced us again to call the attention of our readers to the policy indicated in both branches of the National Legislature, during its present session, respecting the disposition of the Public Lands. We have not seen this report, but as represented by the public prints, the Committee recommend the passage of a law donating to every man and woman who may be the head of a family and a citizen of the United States, one hundred and sixty acres of land, provided they settle upon and cultivate it.

That a change so radical in the present land system, one too, so destitute of every principle of statesmanship, should receive favor from prominent statesmen, of almost every section of the Union. is to us wholly incomprehensible. That the present system is unjust in its operations, all must admit, and, that it is destined ere long to undergo important changes, there can be little doubt; but in making these changes, the interest of the respective States in which the lands are situate, should not be wholly disregarded. If the General Government is willing to abandon all claim to the revenue arising from the sale of lands, and bestow them on individuals, we can see no good reason why it should object to transferring them to the respective States: in a pecuniary point of view the result would be the same: and in view of the social advantages, it seems to us that the arguments are all in favor of this policy.

We can scarcely imagine the population of the old States so crowded, or, that their resources are so much exhausted, as to make it desirable that greater inducements should be offered to emigration: and even were this the case, the inducements would be increased rather than diminished, in the view of intelligent individuals, by transferring the lands to the

States. For by placing it in the power of the new States to establish a thorough system of common school education — of constructing works of internal improvement—of making thorough geological surveys and other improvements, the elements of prosperity would be greatly increased, notwithstanding the emigrant should be required to pay for his land.

Capital accumulates by very slow degrees in newly settled countries; and unless new States possess other means of raising revenue than by taxation, one generation, at least, must pass away before much can be done for the cause of education or internal improvement.

If Congress should be unwilling to place the absolute control of the lands under the direction of the States, let reasonable restraints be ingrafted in the grant; the present prices might be reduced; the right of pre-emption might be secured to the settler; and such other stipulations made in favor of emigrants as would secure them in the acquisition of the soil on reasonable terms. But, in our opinion, there is no necessity for any such restraints; the new States desire population more than money, and there would be no danger that they would hold their lands on terms that would tend to prevent emigration.

We imagine, however, that that portion of the people of the old States who are willing to abandon the revenue arising from the sale of public lands, have, perhaps, no choice whether they shall be donated to individuals or to the respective States in which they are situate: and hence, we may reasonably conclude that it will be in the power of the new States to give direction to the policy of Congress in this respect.

This new measure originated with politicians at Washington; and as far as we are advised, has not been canvassed before the people in any part of the Union. It is of that class of measures that belongs to the progressive spirit of the age, and which generally looks to a change in the existing condition of things, rather than to the new relations that must follow.

We are fully persuaded that if this measure should be adopted, the government sales will never afterwards be sufficient to defray the expenses of surveying; that the cost of extinguishing the Indian title and many other incidental expenses, will have to be borne in future by the National Treasury; and surely, no one will advocate a policy that would require the Government of the United States to raise money by imposts or otherwise, for the purpose of paying for lands to be given away to individuals. Besides, the grants of land recently made to individuals, for public services, would be rendered totally worthless by the adoption of this measure; and, if these individuals had a just claim on the Government,

would it not be reasonable that they should be paid in money, for the depreciation caused by its policy? By opening the public domain to settlement without cost, the price of land in the old States would be materially affected; for it cannot be doubted that it would greatly increase the current of emigration already flowing to the West. Are the people of the old States prepared to support a policy calculated to depreciate the money value of their land—to raise the price of labor by drawing off their operatives, and weaken their relative strength in the National Legislature? Nor will the measure prove less prejudicial to the new States than to the old. It may be the means of settling the wild lands more rapidly; but it will, in a great degree, deprive the new States of the social means of education and internal improvement; for the lands heretofore donated for these purposes would be of little value for many years to come; and without a revenue from that source, the present generation will probably pass away before an efficient system of public education can be established, or, the resources of the country sufficiently developed to carry out a system of internal improvement.

It is time that the people now inhabiting the new States should look to their own individual and social interest: they have encountered the difficulties incident to the settlement of new countries, with manly fortitude, and submitted to many privations without complaining, and if they are wise and just to themselves, they will insist upon the adoption of a policy in respect to the disposition of the public domain, that will secure to them the benefits enjoyed by older communities. They will claim, in consideration of having broken the wilderness, and opened the way for civilization to follow, that they are entitled to look to the public domain as a source whence to draw the means of establishing a thorough system of education—of constructing works of internal improvement—and of exploring their mineral resources. If their just claim to these means are denied, and the little which they have received should be rendered valueless by the action of the General Government, a large accession to their population will, instead of advancing their prosperity, be calculated to prolong their colonial condition. How is the farmer of the West to be benefited by increasing the number of those engaged in the same pursuit, without increasing either the demand or the facilities of transporting his products to market? Indeed we can see no benefit accruing to this region from the measure proposed, except it may tend to hasten the time when the political power of the nation shall be transferred to the Valley of the Mississippi, and even this can scarcely be deemed desirable until we shall have laid a broader and better foundation for intellectual and social improvement.

The immense public domain possessed by the General Government, constitutes a source of wealth more extensive, perhaps, than was ever enjoyed by any other nation. This is a social fund, held in trust for social purposes; not for one class of individuals only, but for all; and it is the duty of Congress to manage and dispose of it so as to advance, as far as practicable, the social interest of all classes in every part of the Union. To donate the whole of this vast fund to the agricultural part of the community, without looking to the interest of other classes, would be a gross violation of the trust; for, while the farmer of small means is placed in possession of a homestead, and, in a condition to educate his children, the mechanic and artizan are left to obtain a shelter as best they may, and educate their offspring out of the precarious profits of their labor. Nor would less injustice be done to the earlier settlers of the country, who have not only suffered the privations incident to the settlement of new districts, but have also paid for their lands; for with few exceptions, none but the emigrant will be able to avail themselves of the bounty proposed; and surely it is but just that these should contribute something towards the improvement of the country for the benefit of those who, in times past, have purchased land and prepared the way for their coming.

Among the many transcendent advantages which the people of this country enjoy, there is not one more important, perhaps, in a national point of view, than that arising from the possession of a public domain sufficient in extent to sustain a number of inhabitants at least five times greater than our present population. And were this immense fund appropriated to purposes strictly social, as of right it should be, it would enable us to do as much towards the advancement of our social condition in twenty years, as would be accomplished, perhaps, in fifty under the system proposed by the Committee on Agriculture.

We are in favor of a change in the present system, but we think the measure ought to originate with the people, and be canvassed by others than politicians; it is connected with the interest of all classes; and Congress should have the benefit of their mature deliberations before it finally acts on the subject. And for the purpose of obtaining the views of the people, and, of bringing their opinion to bear upon the National Legislature, we recommend that a convention be held at some suitable place in the new States, where delegates from the old States may also attend if they see proper, for the purpose of establishing the outlines of a system that shall be just in its operations, and calculated to promote the social as well as individual interest. With a view to the attainment of this end, we earnestly, but respectfully, invite the public Press to

aid us in bringing this subject before the country: it is one in which all may act in concert—it belongs to no particular party—and if we cannot bring all the new States to act with us, let us, at least, arouse the people of Missouri. The interest of no other State is more deeply involved in the manner in which the public lands shall be disposed of; for the subject is intimately connected with her schemes of internal improvement—with the development of her mineral resources—with a system of public education—and in a word, with her general prosperity. And hence, it is the duty of every citizen throughout the State to countenance and encourage such a movement as will be likely to bring about a change in the present system.*

ART II.—"ASPECTS OF NATURE."

In a recent perusal of this excellent work, it occured to us that the descriptions which it contains of a portion of South America, would be found interesting to our readers; and this impression was strengthened by contemplating the new relations that are rapidly taking place between our own country and the tropical regions of this Continent. Besides the effects which the peculiar institutions of the United States are destined to produce on that part of the globe, the increase of population and development of the resources of this country require, as a natural consequence, a corresponding development of the resources of the torrid zone. And thitherward, impelled by natural laws, Northern enterprise, commerce, and Northern institutions are destined to go, until a thorough revolution shall have been wrought in the condition of that region.

Impelled by a thirst for knowledge, Baron Humboldt explored a portion of South America many years ago; and his account of its physical aspects has been long regarded as the best authority upon that subject. It was here that he collected a a large portion of the materials for the "Aspects of Nature" —a work that has been read with so much interest by the people of two Continents. And yet, one who reads it with attention is impressed with the idea that, in many respects, the execution falls far short of the design of the author.

Humboldt is a moral hero, and seems to have conceived the idea of making himself acquainted with every part of the globe, with a view of discovering the influence which the situation, form, and extent of continents, exert upon climate, vegetation and animals; and also upon the feelings, the moral dispositions and the destinies of man. It is no disparagement

* We refer our readers to page 281, Vol. 3, where we have more fully expressed our views on this subject.

of the genius, or heroism of the author, to affirm that he undertook a task that no one individual could accomplish—he is, nevertheless, entitled to the gratitude of his race for having performed so much.

In his preface to the first edition of the "Aspects of Nature," he says: "throughout the entire work I have sought to indicate the unfailing influence of external nature on the feelings, the moral dispositions, and the destinies of man. To minds oppressed with the cares or the sorrows of life, the soothing influence of the contemplation of nature, is peculiarly precious; and to such, these pages are more especially dedicated." In view of this annunciation of the author's design, we had reason to anticipate a philosophical exposition of the relations that exist between the external world and the moral nature of man; and also, for an illustration of that wise and benevolent economy which connects him with the Universe, and enlarges and refines his affections in proportion to the knowledge he acquires respecting the laws of nature. But in this we have been disappointed: for, in the few instances where this branch of the subject is touched at all, he attempts nothing beyond a description of the effects produced —the principles involved in these relations are not noticed. It is not so much the philosopher as the observer of facts and phenomena, that is conspicuous throughout the work. He has devoted a long life to the observation and study of external nature—he has examined it in all its aspects—and his descriptions are occasionally inimitable. Of steppes and deserts he says: "like the ocean, the steppe fills the mind with the feeling of infinity; and thought, escaping from the visible impressions of space, rises to contemplations of a higher order. Yet, the aspect of the clear, transparent mirror of the ocean, with the light, curling, gently-foaming, sportive waves, cheer the heart like that of a friend; but the steppe lies stretched before us dead and rigid, like the stony crust of a desolated planet." Here, physical objects and moral feeling are most happily blended and united in the same picture; while the contrast between the steppe and the ocean is grand and beautiful—as a picture, it is complete—but yet, it is not calculated to satisfy one who reads for the purpose of obtaining useful knowledge; for we desire to know in what respects the general character of a people, residing on or near the shores of the ocean, differs from those of the steppes or plains; and, whether an equal degree of individual and social happiness is attainable in each of these respective regions. These are inquiries intimately connected with the progress of civilisation; and we regret that one who has enjoyed so many opportunities of observing the influence of the aspects of nature on the moral condition of man, has not given more fully the result of his observations on this subject.

And it may be remarked, that the two short sentences just quoted, contain almost the only reference to "the influence of external nature, on the feelings, moral dispositions and destinies of man" that occurs in the treatise on "Steppes and Deserts"; which, with the annotations and additions, constitute about one-third of the volume.

Nor are his descriptions of physical objects, sufficiently full, in general, to satisfy the mind of the common reader. He sketches the prominent points with the boldness and accuracy of one who comprehends the entire subject: mountains rise in bold relief against the sky; broad and fertile vallies open to view, and, extensive steppes and deserts, rivalling the ocean in breadth, lie before us; but in general, the details remain unfinished; and even the outlines of the picture are so faintly sketched, if indeed they are traced at all, that we feel bewildered, and sometimes wish that the author were present to answer our enquiries. But let us proceed with his description of "Steppes and Deserts":

"STEPPES AND DESERTS."

"A widely extended and apparently interminable plain stretches from the southern base of the lofty granitic crest, which, in the youth of our planet, when the Caribbean gulf was formed, braved the invasion of the waters. On quitting the mountain valleys of Caraccas, and the island-studded lake of Tacaragua, whose surface reflects the stems of plantains and bananas, and on leaving behind him meads adorned with the bright and tender green of the Tahitian sugar-cane or the darker verdure of the Cacao groves, the traveler, looking southward, sees unrol before him Steppes receding until they vanish in the far horizon.

Fresh from the richest luxuriance of organic life, he treads at once the desolate margin of a treeless desert. Neither hill nor cliff rises, like an island in the ocean, to break the uniformity of the boundless plain; only here and there, broken strata of limestone, several hundred square miles in extent, appear sensibly higher than the adjoining parts. "Banks" is the name given to them by the natives; as if language instinctively recalled the more ancient condition of the globe, when those elevations were shoals, and the steppes themselves were the bottom of a great Mediterranean sea.

Even at the present time, nocturnal illusion still recalls those images of the past. When the rapidly rising and descending constellations illumine the margin of the plain, or when their trembling image is repeated in the lower stratum of undulating vapor, we seem to see before us a shoreless ocean. Like the ocean, the Steppe fills the mind with the feeling of infinity; and thought, escaping from the visible impressions of space,

rises to contemplations of a higher order. Yet, the aspect of the clear, transparent mirror of the ocean, with its light, curling, gently foaming, sportive waves, cheers the heart like that of a friend; but the Steppe lies stretched before us dead and rigid, like the stony crust of a desolated planet.

In every zone nature presents the phenomena of these great plains; in each they have a peculiar physiognomy, determined by diversity of soil, by climate, and by elevation above the level of the sea.

In Northern Europe, the Heaths, which, covered with a single race of plants repelling all others, extend from the point of Jutland to the mouth of the Sheldt, may be regarded as true Steppes—but Steppes of small extent and hilly surface, if compared with the Llanos and Pampas of South America, or even with the prairies of the Missouri* and the barrens of the Coppermine river, where range countless herds of the shaggy buffalo and musk ox.

A grander and severer aspect characterizes the plains of the interior of Africa. Like the wide expanse of the Pacific Ocean, it is only in recent times that attempts have been made to explore them thoroughly. They are parts of a sea of sand, which, stretching eastward, separate fruitful regions from each other, or encloses them like islands; as where the Desert, near the basaltic mountains of Harudsh, surrounds the Oasis of Siwah, rich in date trees, and in which the ruins of the temple of Ammon, mark the venerable site of an ancient civilisation. Neither dew nor rain bathes these desolate plains, or develops on their glowing surface the germs of vegetable life; for heated columns of air, every where descending, dissolve the vapors, and disperse each swiftly vanishing cloud.

Where the Desert approaches the Atlantic Ocean, as between Wadi Nun and Cape Blanco, the moist sea air pours in, to supply the void left by these upward currents. The mariner, steering towards the mouth of the Gambia through a sea covered with weed, when suddenly deserted by the east trade winds of the tropics, infers the vicinity of the widely-extended heat-radiating desert. Herds of antelope and swift-footed ostriches, roam through these vast regions; but, with the exception of the watered Oases or islands in the sea of sand, some groups of which have recently been discovered, and whose verdant shores are frequented by nomade Tibbos, and Tuaricks, the African Desert must be regarded as uninhabit-

* In his annotation on this sentence, the Author says: "to the east of the Mississippi dense forests still partially prevail; but to the west of the river there are only prairies, in which the buffalo (Bos Americanus) and the musk ox (Bos Moschatus), feed in large herds." We notice the inaccuracy of this statement to show that even Humboldt is not always to be relied on as authority, especially in respect to things that he has not observed in person. It is true, the remark has reference to the Upper Mississippi; but when applied to that region, it would only be true as a general remark. EDITORS.

able for man. The more civilized nations who dwell on its borders only venture to enter it periodically. By trading routes, which have remained unaltered for thousands of years, caravans traverse the long distance from Tafilet to Timbuctoo, and from Moorzouk to Bornou; adventurous undertakings, the possibility of which depends upon the existence of the camel, "the ship of the desert," as it is called in the traditionary language of the eastern world.

These African plains occupy an extent nearly three times as great as the neighboring Mediterranean sea. They are situated partly within, and partly in the vicinity of the tropics; and on this situation their peculiar character depends. In the eastern part of the Old Continent, the same geognistic phenomenon occurs in the temperate zone. On the plateaux of Central Asia, between the gold mountains or the Altai, and the Kuen-lun, from the Chinese wall to beyond the Celestial mountains, and towards the sea of Aral, there extend, through a length of many thousand miles, the most vast, if not the most elevated, Steppes on the surface of the globe. I have myself, had the opportunity, fully thirty years after my South American journey, of visiting a portion of them; namely, the Calmuck Khirgis Steppes between the Don, the Volga, the Caspian, and the Chinese lake Dsaisang, being an extent of almost 2800 geographical miles.

These Asiatic Steppes, which are sometimes hilly and sometimes interrupted by pine forests, possess (dispersed over them in groups) a far more varied vegetation than that of the Llanos and Pampas of Caraccas and Buenos Ayres. The finest part of these plains, which is inhabited by Asiatic pastoral tribes, is adorned with low bushes of luxuriant, white-blossomed Rosaceæ, and with Fritillarias, Tulips and Cypripedias.

As the torrid zone is characterised on the whole by a disposition in all vegetation to become arborescent, so some of the Asiatic Steppes in the temperate are characterised by the great height attained by flowering herbaceous plants, Saussureas and other Synantheræ, and Papilionaceæ, especially a host of species of Astralagus. In traversing pathless portions of these Steppes, the traveler, seated in the low Tartar carriages, sees the thickly crowded plants bend beneath the wheels, but without rising up cannot look around him to see the direction in which he is moving. Some of the Asiatic Steppes are grassy plains, others are covered with succulent, evergreen, articulated soda plants: many glisten from a distance with flakes of exuded salt, which cover the clayey soil, not unlike in appearance to fresh fallen snow.

These Mongolian and Tartarian Steppes, interrupted frequently by mountainous features, divide the very ancient civilization of Thibet and Hindostan, from the rude nations of

Northern Asia. They have in various ways exercised an important influence on the changeful destinies of man. They have compressed the population towards the south, and have tended, more than the Himalaya, or the snowy mountains of Srinagur and Ghorka, to impede the intercourse of nations, and to place permanent limits to the extension of milder manners, and of artistic and intellectual cultivation in Northern Asia.

But, in the history of the past, it is not alone as an opposing barrier that we must regard the plains of Central Asia: more than once they have proved the source from which devastation has spread over distant lands. The pastoral nations of these Steppes—Moguls, Getæ, Alani, and Usuni,—have shaken the world. As, in the course of past ages, early intellectual culture has come like the cheering light of the sun from the East, so, at a later period, from the same direction barbaric rudeness has threatened to overspread and involve Europe in darkness. A brown pastoral race, of Turkish or Turkish descent, the Hiongnu, dwelling in tents of skins, inhabited the elevated Steppe of Gobi. Long terrible to the Chinese power, a part of this tribe was driven back into Central Asia. The shock or impulse thus given passed from nation to nation, until it reached the ancient land of the Finns, near the Ural mountains. From thence, Huns, Avari, Ghazares, and various admixtures of Asiatic races, broke forth. Armies of Huns appeared successively on the Volga, in Pannonia, on the Marne, and on the Po, desolating those fair and fertile fields which, since the time of Antenor, civilized man had adorned with monument after monument. Thus went forth from the Mongolian deserts a deadly blast, which withered on Cisalpine ground, the tender, long-cherished flower of art.

From the salt Steppes, of Asia, from the European Heaths smiling in summer with their purple blossoms rich in honey, and from the arid deserts of Africa, devoid of all vegetation, let us now return to these South American Plains of which I have already began to trace the picture, albeit in rude outlines.

The interest which this picture can offer to the beholder is, however, exclusively that of pure nature. Here no Oasis recalls the memory of earlier inhabitants; no carved stone, no ruined building, no fruit tree once the care of the cultivator, but now wild, speaks of the art or industry of former generations. As if estranged from the destinies of mankind, and rivetting attention solely to the present moment, this corner of the earth appears as a wild theatre for the free development of animal and vegetable life.

The Steppe extends from the Caraccas coast chain to the forests of Guiana, and from the snowy mountains of Merida, (on the slope of which the Natron Lake Urao is an object of

superstitious veneration to the natives), to the great delta formed by the Oronoco at its mouth. To the south-west a branch is prolonged, like an arm of the sea, beyond the banks of the Meta Vichada to the unvisited sources the Guaviare, and to the lonely mountain to which the excited fancy of the Spanish soldiery gave the name of Parama de la Suma Paz—the seat of perfect peace.

This Steppe occupies a space of 16,000 (256,000 English) square miles. It has often been erroneously described as running uninterruptedly, and of an equal breadth, to the straits of Magellan, forgetting the forest-covered plain of the Amazons, which intervenes between the grassy Steppes of the Apure and those of the river Plate. The Andes of Cochabamba, and the Brazilian group of mountains, send forth, between the province of Chiquitos and the Isthmus of Villabella, some detached spurs, which advance, as it were, to meet each other. A narrow plain connects the forest lands of the Amazons with the Pampas of Buenos Ayres. The latter far surpass the Llanos of Venezuela in area; and their extent is so great that, while their northern margin is bordered by palm trees, their southern extremity is almost continually covered with ice.

The Tuyu, which resembles the Cassowary, (the struthio rhea), is peculiar to these Pampas, which are also the haunt of troops of dogs descended from those introduced by the colonists, but which have become completely wild, dwelling together in subterranean hollows, and often attacking with blood-thirsty rage the human race whom their progenitors served and defended.

Like the greater portion of the desert of Sahara, the northernmost of the South American plains, the Llanos, are in the torrid zone: during one-half of the year, they are desolate, like the Lybian sandy waste; during the other, they appear as a grassy plain, resembling many of the Steppes of Central Asia.

It is a highly interesting though difficult task of general geography to compare the natural conditions of distant regions and to represent by a few traits the results of this comparison. The causes which lessen both heat and dryness in the New World are manifold, and in some respects as yet only partially understood. Amongst these may be classed the narrowness and deep indentation of the American land in the northern part of the torrid zone, where, consequently, the atmosphere, resting on a liquid base, does not present so heated an ascending current;—the extension of the continent towards the pole; —the expanse of ocean over which the trade winds sweep freely, acquiring thereby a cooler temperature;—the flatness of the eastern coasts;—currents of cold sea-water from the

antartic regions, which, coming from the south-west to the north-east, first strike the coast of Chili in the parallel of 35° south latitude, and advance along the coast of Peru as far north as Cape Parina, and then turn suddenly to the west;—the numerous lofty mountain chains, rich in springs, and whose snow-clad summits, rising high above all the strata of clouds, cause descending currents of cold air to roll down their declivities:—the abundance of rivers of enormous breadth, which, after many windings, seek the most distant coast;—Steppes, which, from not being sandy, are less susceptible of acquiring a high degree of heat;—impenatrable forests occupying the alluvial plains situated immediately beneath the equator, protecting with their shade the soil beneath from the direct influence of the sunbeams, and exhaling, in the interior of the country, at a great distance from the mountains and from the ocean, vast quantities of moisture, partly imbibed and partly elaborated:—all these circumstances afford to the flat part of America a climate which, by its humidity and coolness contrasts wonderfully with that of Africa. It is to the same causes that we are to attribute the luxuriant vegetation, the magnificent forests, and that abundant leafiness by which the New Continent is peculiarly characterised.

If, therefore, one side of our planet has a moister atmosphere than the other, the consideration of the present condition of things, is amply sufficient to explain the problem presented by this inequality. The physical enquirer needs not to clothe the explanation of these phenomena in a mantle of geological myths. He needs not to assume that on our planet the harmonious reconciliation of the destructive conflict of the elements took place at different epochs in the eastern and the western hemispheres; or that America emerged later than the other parts of the globe from the chaotic watery covering, as an island of swamps and marshes tenanted by alligators and serpents.

There is, indeed, a striking similarity between South America and the southern peninsula of the Old Continent in the form of the outline and in the direction of the coasts; but the nature of the soil, and the relative position of the neighboring masses of land, produce in Africa that extrordinary aridity which, over an immense area, checks the development of organic life. Four-fifths of South America are situated on the southern side of the equator; or in a hemisphere which from the greater proportion of sea, and from other causes, is cooler and moister than our northern half of the globe, to which the larger part of Africa belongs. The breadth of the South American Steppe, measured from east to west, is only a third of that of the African Desert. The Llanos receive the influuence of the tropical sea wind, while the African Deserts,

being situated in the same zone of latitude as Arabia and the south of Persia, are in contact with strata of air which have blown over warm heat-radiating continents. The venerable and only lately appreciated father of history, Herodotus, in the true spirit of an enlarged view of nature, described the Deserts of Northern Africa, of Yemen, of Kerman, and Mekran (the Ghedrosia of the Greeks), and even as far as Moultan, as forming a single connected sea of sand.

In addition to the action of these hot winds, there is, (so far as we know) an absence or comparative paucity in Africa of large rivers, of widely extending forests producing coolness and exhaling moisture, and of lofty mountains. Of mountains covered with perpetual snow, we know only the western part of the Atlas, whose narrow range, seen in profile from the Atlantic, appeared to the ancient navigators when sailing along the coast, as a single, detached, lofty, sky-supporting mount.

The eastern prolongation of the chain extends nearly to Dakul, where Carthage, once mistress of the seas, now lies in mouldering ruins. As forming a long extended coast chain, or Gætulian rampart, the effect of the Atlas range is to intercept the cool north breezes, and the vapors which ascend from the Mediterranean.

The Mountains of the Moon, Djebel-al-Komr, (fabulously represented as forming part of a mountainous parallel extending from the high plateau of Habesh, an African Quito, to the sources of the Senegal,) were supposed to rise above the limit of perpetual snow. The Cordillera of Lupata, which extends along the eastern coast of Mozambique and Monomotapa, as the Andes along the western coast of Peru, is believed to be covered with perpetual snow, in the gold districts of Machinga and Mocanga. But all these mountains with the abundant waters to which they give rise, are far remote from the immense Desert which stretches from the southern declivity of the Atlas to the Niger.

Possibly, however, all the causes of heat and dryness which have been enumerated may have been insufficient to transform such considerable parts of the African plains into a dreadful desert, without the occurrence of some revolution of nature—such, for instance, as an irruption of the ocean, whereby these flat regions may have been despoiled of their coating of vegetable soil, as well as of the plants which it nourished. Profound obscurity veils the period of such an event, and the force which determined the irruption. Perhaps it may have been caused by the great "rotary current" which sends the warmer water of the Mexican gulf over the banks of Newfoundland and to the shores of the Old Continent, and causes West India cocoa nuts and other tropical fruits to reach the coast of Ireland and Norway. There is still, at least at the

present time, an arm of this current directed from the Azores to the south-east, which sometimes produces disasters by carrying ships upon the west coast of Africa, which it strikes at a part lined by sand-hills. Other sea coasts (I particularly recall that of Peru between Amotape and Coquimbo) show that, in these hot regions of the earth, where rain never falls and where neither Lecideas nor other Lichens germinate, centuries and perhaps thousands of years may elapse before the moveable sand can afford to the roots of plants a secure holding place.

These considerations are sufficient to explain why, with an external similarity of form, Africa and South America present so marked a difference of character, both in respect to climate and to vegetation. But although the South American Steppe is covered with a thin coating of mould or fertile earth, and although it is periodically bathed by rains, and becomes covered at such seasons with luxuriently sprouting herbage, yet, it never could attract the surrounding nations or tribes to forsake the beautiful mountain valleys of Caraccas, the margin of the sea, or the wooded banks of the Oronoco, for the treeless and springless wilderness; and thus, previous to the arrival of European and African settlers, the Steppe was almost entirely devoid of human inhabitants.

The Llanos, are indeed, well suited to the rearing of cattle, but the care of animals yielding milk was almost unknown to the original inhabitants of the New Continent. Hardly any of the American tribes have ever availed themselves of the advantages which nature offered them in this respect. The American race (which, with the exception of the Esquimaux, is one and the same from 65 deg. north to 55 deg. south latitude), has not passed from the state of hunters to that of cultivators of the soil through the intermediate stage of a pastoral life. Two kinds of native cattle (the Buffalo and Musk Ox) feed in the northern prairies of western Canada and the plains of Arctic America, in Quivira, and around the colossal ruins of the Aztec fortress, which rises in the wilderness like an American Palmyra, on the solitary banks of the Gila. The long-horned Rocky Mountain Sheep abounds on the arid limestone rock of California. The vicunas, Huanacos, Alpacas and Lamas, belong to South America; but the two first named of all these useful animals *i e.*, the Buffalo and the Musk Ox, have retained their natural freedom for two thousand years, and the use of milk and cheese, like the possession and cultivation of farinaceous grasses, has remained a distinguishing characteristic of the nations of the Old World.

If some of the latter have crossed from Northern Asia to the west coast of America, and if, keeping by preference to the cooler mountain regions, they have followed the lofty ridge

of the Andes towards the south, their migration must have taken place by ways in which they could not be accompanied by their flocks and herds, or bring with them the cultivation of corn. When the long-shaken empire of the Hiongnu fell, may we conjecture that the movements of this powerful tribe may also have occasioned in the north-east of China and in Corea, a shock and an impulse which may have caused civilized Asiatics to pass over into the New Continent? If such a migration had consisted of inhabitants of the Steppes in which agriculture was not pursued, this hazardous hypothesis (which has hitherto been but little favored by the comparison of languages) would at least explain the striking absence of the Cereals in America. Possibly one of these Asiatic priestly colonies whom mystic dreams sometimes impelled to embark in long voyages (of which the history of the peopling of Japan in the time of Tsinchihuang-ti offers a memorable example,) may have been driven by storms to the coasts of New California.

If, then, pastoral life, that beneficent middle stage which attaches nomadic hunting hordes to desirable pastures, and prepares them, as it were, for agriculture, has remained unknown to the aboriginal nations of America, this circumstance sufficiently explains the absence of human inhabitants in the South American Steppes. This absence has allowed the freest scope for the abundant development of the most varied forms of animal life; a development limited only by their mutual pressure, and similar to that of vegetable life in the forests of the Oronoco, where the Hymenæa and the gigantic laurel are never exposed to the destructive hand of man, but only to the pressure of the luxuriant climbers which twine round their massy trunks. Agoutis, small spotted antelopes, cuirassed armadilloes, which, like rats, startle the hare in its subterranean holes, herds of lazy chiguires, beautifully striped, viverræ which poison the air with their odor, the large maneless lion, spotted jaguars, (often called tigers,) strong enough to carry away a young bull after killing him—these, and many other forms of animal life, wander through the treeless plain.

Thus, almost exclusively inhabited by these wild animals, the Steppe would offer little attraction or means of subsistence to those nomadic native hordes, who, like the Asiatics of Hindostan, prefer vegetable nutriment, if it were not for the occasional presence of single individuals of the fan palm, the Mauritia. The benefits of this life-supporting tree are widely celebrated; it alone, from the mouth of the Oronoco to north of the Sierra de Imataca, feeds the unsubdued nation of the Guaranis. When this people were more numerous, and lived in closer contiguity, not only did they support their huts on the

cut trunks of palm trees as pillars on which rested a scaffolding forming the floor, but they also, it is said, twined from the leaf-stalks of the Mauritia cords and mats, which, skilfully interwoven and suspended from stem to stem, enabled them in the rainy season, when the Delta is overflowed, to live in the trees like the apes. The floor of these raised cottages is partly covered with a coating of damp clay, on which the women make fires for household purposes—the flames appearing at night from the river to be suspended high in air. The Guaranis still owe the preservation of their physical, and perhaps also their moral, independence, to the half-submerged, marshy soil over which they move with a light and rapid step, and to their elevated dwellings in the trees—a habitation never likely to be chosen from motives of religious enthusiasm by an American Stylites. But the Mauritia affords to the Guaranis not merely a secure dwelling place, but also various kinds of food. Before the flower of the male palm tree breaks through its tender sheath, and only at that period of vegetable metamorphosis, the pith of the stem of the tree contains a meal resembling sago, which, like the farina of the jatropha root, is dried in thin bread-like slices. The fermented juice of the tree forms the sweet, intoxicating palm wine of the Guaranis. The scaley fruits, which resemble in their appearance reddish fir cones, afford, like the plantain, and almost all tropical fruits, a different kind of nutriment, according as they are eaten after their saccharine substance is fully developed, or in their earlier or more farinaceous state. Thus, in the lowest state of man's intellectual development, we find the existence of an entire people bound up with that of a single tree; like the insect which lives exclusively on a single part of a particular flower.

Since the discovery of the New Continent the Llanos have become habitable to men. In order to facilitate communication between the Oronoco country and the coast, towns have been built here and there on the banks of the streams which flow through the Steppes. The rearing of cattle has began over all parts of these vast regions. Huts, formed of reeds tied together with thongs, and covered with skins, are placed at distances of a day's journey from each other; numberless herds of oxen, horses, and mules estimated, at the peaceful epoch of my journey, at a million and a half, roam over the Steppe. The immense multiplication of these animals, originally brought by man from the Old Continent, is the more remarkable from the number of dangers with which they have to contend.

When, under the vertical rays of the never-clouded sun, the carbonised turfy covering falls into dust, the indurated soil cracks asunder as if from the shock of an earthquake. If at

such times two opposing currents of air, whose conflict produces a rotary motion, come in contact with the soil, the plain assumes a strange and singular aspect. Like conical shaped clouds, the points of which descend to the earth, the sand rises through the rarified air in the electrically charged centre of the whirling current; resembling the loud waterspout dreaded by the experienced mariner. The lowering sky sheds a dim, almost straw-colored light on the desolate plain. The horizon draws suddenly nearer; the Steppe seems to contract, and with it the heart of the wanderer. The hot dusty particles which fill the air increase its suffocating heat, and the east wind blowing over the long-heated soil, brings with it no refreshment, but rather a still more burning glow. The pools which the yellow, fading branches of the fan palm had protected from evaporation, now gradually disappear. As in the icy north the animals become torpid with cold, so here, under the influence of the parching drought, the crocodile and the boa become motionless and fall asleep, deeply buried in the dry mud. Everywhere the death-threatening drought prevails, and yet, by the play of the refracted rays of light producing the phenomenon of the mirage, the thirsty traveler is everywhere pursued by the illusive image of a cool, rippling, watery mirror. The distant palm bush, apparently raised by the influence of the contact of unequally heated, and therefore unequally dense strata of air, hovers above the ground, from which it is separated by a narrow, intervening margin. Half concealed by the dark clouds of dust, restless with the pain of thirst and hunger, the horses and cattle roam around, the cattle lowing dismally, and the horses stretching out their long necks and snuffing the wind, if haply a moister current may betray the neighborhood of a not wholly dried up pool. More sagacious and cunning, the mule seeks a different mode of alleviating his thirst. The ribbed and spherical melon-cactus conceals under its prickly envelope a watery pith. The mule first strikes the prickles aside with his fore feet, and then ventures warily to approach his lips to the plant and drink the cool juice. But resort to this vegetable fountain is not always without danger, and one sees many animals that have been lamed by the prickles of the cactus.

When the burning heat of the day is followed by the coolness of the night, which in these latitudes is always of the same length, even then the horses and cattle can not enjoy repose. Enormous bats suck their blood like vampires during their sleep, or attach themselves to their backs, causing festering wounds, in which musquitoes, hippobosces, and a host of stinging insects, niche themselves. Thus the animals lead a painful life during the season when, under the fierce glow of the sun, the soil is deprived of its moisture. At length, after

the long drought, the welcome season of the rain arrives; and then how suddenly is the scene changed! The deep blue of the hitherto perpetually cloudless sky becomes lighter; at night the dark space in the constellation of the Southern Cross is hardly distinguishable; the soft, phosphorescent light of the Magellanic clouds fades away; even the stars in Aquila and Ophiucus in the zenith, shine with a trembling and less planetary light. A single cloud appears in the south, like a distant mountain rising perpendicularly from the horizon. Gradually the increasing vapors spread like mist over the sky, and now the distant thunder ushers in the life-restoring rain. Hardly has the surface of the earth received the refreshing moisture, before the previously barren Steppe begins to exhale sweet odors, and to clothe itself with Kyllingias, the many panicules of the Paspalum, and a variety of grasses. The herbaceous mimosas, with renewed sensibility to the influence of light, unfold their drooping, slumbering leaves to greet the rising sun; and the early song of birds and the opening blossoms of water plants, join to salute the morning. The horses and cattle now graze in full enjoyment of life. The tall springing grass hides the beautifully spotted jaguar, who, lurking in safe concealment, and measuring carefully the distance of a single bound, springs, cat-like, as the Asiatic tiger on his passing prey.

Sometimes (so the Aborigines relate,) on the borders of the swamps the moistened clay is seen to blister and rise slowly in a kind of mound; then with a violent noise, like the outbreak of a small mud volcano, the heaped-up earth is cast high into the air. The beholder, acquainted with the meaning of this spectacle, flies, for he knows there will issue forth a gigantic water-snake or a scaly crocodile, awakened from a torpid state by the first fall of rain.

The rivers which bound the plain to the south, the Arauca, Apure, and Payara, become gradually swollen; and now nature constrains the same animals, who in the first half of the year panted with thirst on the dry and dusty soil, to adopt an amphibious life. A portion of the Steppe now presents the aspect of a vast inland sea. The brood mares retire with their foals to the higher banks, which stand like islands above the surface of the lake. Every day the space remaining dry becomes smaller. The animals, crowded together, swim about for hours in search of other pasture, and feed sparingly on the tops of the flowering grasses rising above the seething surface of the dark-colored water. Many foals are drowned, and many are surprised by the crocodiles, killed by a stroke of their powerful notched tails, and devoured. It is not a rare thing to see the marks of the pointed teeth of those monsters on the legs of the horses and cattle, who have narrowly escaped from their blood-thirsty jaws. Such a sight reminds the

thoughtful observer involuntarily of the capability of conforming to the most varied circumstances, with which the all-providing Author of Nature has endowed certain animals and plants.

The ox and the horse, like the farinaceous cerealia have followed man over the whole surface of the globe, from India to Northern Siberia, from the Ganges to the River Plate, from the African sea shore to the mountain plateau of Antisana, which is higher than the summit of the peak of Teneriffe.

The ox, wearied from the plough, reposes, sheltered from the noon-tide sun in one country by the quivering shadow of the northern birch, and in another by the date palm. The same species which, in the east of Europe, has to encounter the attacks of bears and wolves, is exposed in other regions to the assaults of tigers and crocodiles.

But the crocodile and jaguar are not the only assailants of the South American horses; they have also a dangerous enemy among fishes. The marshy waters of Bera and Rastro are filled with numberless electric eels, which can at pleasure send a powerful discharge from any part of their slimy, yellow-spotted bodies. These gymnoti are from five to six feet in length, and are powerful enough to kill the largest animals when they discharge their nervous organs at once in a favorable direction.

The route from Uritucu through the Steppe, was formerly obliged to be changed, because the gymnoti had increased to such numbers in a small stream that, in crossing it, many horses were drowned every year, either from the effects of the shocks they received, or from fright. All other fishes fly the vicinity of these formidable eels. Even the fisherman, angling from the high bank, fears lest the damp line should convey the shock to him from a distance. Thus, in these regions, electric fire breaks forth from the bosom of the waters.

The capture of the gymnoti affords a picturesque spectacle. Mules and horses are driven into a marsh which is closely surrounded by Indians, until the unwonted noise and disturbance induce the pugnacious fish to begin an attack. One sees them swimming about like serpents, and trying cunningly to glide under the bellies of the horses. Many of these are stunned by the force of the invisible blows; others, with manes standing on end, foaming, and with wild terrror sparkling in their eyes, try to fly from the raging tempest. But the Indians, armed with long poles of bamboo, drive them back into the pool. Gradually the fury of the unequal strife begins to slacken. Like clouds which have discharged their electricity, the wearied fish begin to disperse; long repose and abundant food are rrquired to replace the galvanic force which they have expended. Their shocks become gradually weaker and

weaker. Terrified by the noise of the trampling horses, they timidly approach the bank, where they are wounded by harpoons, and cautiously drawn on shore by non-conducting pieces of dry wood.

Such is the extraordinary battle between horses and fish. That which forms the invisible but living weapon of this electric eel;—that which, awakened by the contact of moist, dissimilar particles, circulates through the organs of plants and animals;—that which, flashing from the thunder cloud illumines the bright skyey canopy;—that which draws iron to iron, and directs the silent recurring march of the guiding needle;—all, like the several hues of the divided ray of light, flow from one source; and all blend again together in one perpetually, every where diffused, force or power.

I might here close the hazardous attempt to trace a picture of nature such as she shows herself in the Steppes. But as on the ocean fancy not unwillingly dwells awhile on the image of its distant shores, so, before the wide plain disappears from our view, let us cast a rapid glance at the regions by which the Steppes are bounded.

The Northern Desert of Africa divides two races of men who belong orignally to the same part of the globe, and whose unreconciled discord appears as ancient as the mythus of Osiris and Typhon. North of the Atlas there dwell nations with long and straight hair, of sallow complexion, and Caucasin features. On the south of the Senegal, towards Soudan, live hordes of negroes in different stages of civilisation. In Central Asia the Mongolian Steppe divides Siberian barbarism from the ancient civilisation of the peninsula of India.

The South American Steppes form the boundary of a partial European civilisation. To the north, between the mountains of Venezuela and the Caribbean sea, we find commercial cities, neat villages, and carefully cultivated fields. Even the love of art and scientific culture, together with the noble desire of civil freedom, have long been awakened there. Towards the south, the Steppe terminates in a savage wilderness. Forests, the growth of thousands of years, fill with their impenetrable fastnesses the humid regions between the Oronoco and the Amazons Massive, leaden-colored granite rocks narrow the bed of the foaming rivers. Mountains and forests resound with the thunder of the falling waters, with the roar of the tiger-like jaguar, and with the melancholy rain-announcing howlings of the bearded apes.

When a sand-bank is left dry by the shallow current, the unwieldy crocodiles lie, with open jaws, as motionless as pieces of rock, and covered with birds. The boa serpent, his body marked like a chess-board, coiled up, his tail wound round the branch of a tree, lies lurking on the bank, secure

of his prey; he marks the young bull, or some feebler inhabitant of the forest, as it fords the stream, and swiftly uncoiling, seizes the victim, and covering it with mucus, forces it laboriously down his swelling throat.

In the midst of this grand and savage nature, live many tribes of men, isolated from each other by the extraordinary diversity of their languages: some are nomadic, wholly unacquainted with agriculture, and using ants, earth and gums as food; these, as the Ottamacs and Jarures, seem a kind of outcasts from humanity: others, like the Maquiritares and Macos, are settled, more intelligent, and of milder manners, and live on fruits which they have themselves reared.

Large spaces between the Cassiquiare and the Attabapo are only inhabited by the tapir and social apes, and are wholly destitute of human beings. Figures graven on the rocks show that even these deserts were once the seat of some degree of intellectual cultivation. They bear witness to the changeful destinies of man, as do the unequally developed flexible languages; which latter belong to the oldest and most imperishable class of historic memorials.

But as in the Steppe tigers and crocodiles fight with horses and cattle, so in the forests on its borders, in the wilderness of Guiana, man is ever armed against man. Some tribes drink, with unnatural thirst, the blood of their enemies; others apparently weaponless, and yet prepared for murder, kill with a poisoned thumb-nail. The weaker hordes, when they have to pass along the sandy margin of the rivers, carefully efface with their hands the traces of their timid footsteps. Thus man, in the lowest stage of almost animal rudeness, as well as amidst the apparent brilliancy of our higher cultivation, prepares for himself and his fellow-men, increased toil and danger. The traveler, wandering over the wide globe by sea and land, as well as the historic enquirer searching the records of past ages, finds everywhere the uniform and saddening spectacle of man at variance with man.

He, therefore, who, amidst the unreconciled discord of nations, seeks for intellectual calm, gladly turns to contemplate the silent life of vegetation, and the hidden activities of forces and powers operating in the sanctuaries of nature; or, obedient to the inborn impulse which for thousands of years has glowed in the human breast, gazes upwards in meditative contemplation on those celestial orbs, which are ever pursuing in undisturbed harmony their ancient and unchanging course."

ART. III.—PROFESSOR TUCKER ON THE INCREASE OF THE PRECIOUS METALS.

Having given our own views touching the effects which the large products of gold, in California, are calculated to produce on prices, we should be justly chargable with egotism, did we not publish the opinions of others who have made political economy their study and profession. The following article, from the pen of the Hon. George Tucker, late professor of moral philosophy and political economy in the University of Virginia, author of "Progress of the United States in population and wealth in fifty years," is, upon the whole, in our opinion, the best exposition that we have met with on this subject. Whether the conclusions of the author are just or otherwise, we regard his statistics relating to the products of the precious metals, since the discovery of the American continent, as being highly worthy of a place in our Journal.

We cannot reason without facts. And the correctness of our conclusions must depend mainly upon the question whether all the facts touching the subject under consideration have been collected, and their bearing carefully observed and appreciated. In the consideration of all subjects relating to public policy or political economy, the condition of the country and the spirit of the age are *facts*, of all others, most important to be understood. And, therefore, one who calculates that a particular state of facts will produce the same results now that followed them 200 years ago, when the social condition was unlike the present, will certainly be wrong in his conclusions.

Since the discovery of gold in California we have met with several elaborate articles from the pens of prominent writers, on the consequences of an increase of the precious metals; but none of them have, in our opinion, sufficiently appreciated the influence which the rapid increase of property and commerce must necessarily have on the subject under consideration. After much reflection we are more fully persuaded that all the gold which is likely to be found in California will be required to represent the increase of property, and, to sustain our growing commerce; and consequently, no such depreciation of value will ensue, as appears to be apprehended by many intelligent writers.

Notwithstanding our high respect for the author of the following article, we cannot agree with him in all his conclusions, and have, therefore, taken occasion, in a note at the proper place, to question the accuracy of some of his views.

EDITORS.

"The extraordinary fertility of the gold mines of California, no longer a matter of doubt, has naturally suggested the apprehension that the precious metals, or at least gold, will experience a depreciation similar to that which took place in the fifteenth and sixteenth centuries, in consequence of the discovery of America.

The subject is important from its bearing on all cases of perpetual ground rents; on all money contracts extending over a long term of years; on the value, and perhaps the regulation, of the specie currency everywhere; and probable extent of this depreciation, that we may either guard against its mischiefs, or prepare for those we cannot prevent.

The depreciation of gold and silver caused by the American mines, would furnish us with the safe guide of experience on this subject, if our knowledge of its facts was at once authentic and precise—but they are rarely both, and are sometimes neither. To deduce the future depreciation from the past, we must know the amount of the precious metals in Europe at the time America was discovered; the accession to that amount furnished by the American mines at different periods; the depreciation at those periods; the quantity of those metals now in existence; and lastly, the amount the California mines are likely to furnish. But all these facts are founded more or less on conjectures; some of which, resting on loose and imperfect data, have differed very widely from one another. While precise certainty is thus unattainable, enough is probably known to enable us to make, within certain limits, approaches to the truth on which we may, with some confidence rely.

According to approved authorities, the quantity of gold and silver in Europe, at the end of the fifteenth century, when America was discovered, was about $300,000,000. Mr. Jacob estimates the coin then in circulation at $170,000,000.

Of the amount drawn from the American mines, Baron Humboldt's estimate is entitled to more respect than any other. He examined the several previous estimates thoroughly; and he had means of information which probably no preceding inquirer had possessed. The result of his investigation was as follows:

From 1492 to 1500 the amount of gold and silver which flowed into Europe from America was $250,000 a year: in all $2,000,000.

From 1500 to 1545 it was $3,000,000 a year: in all $135,000,000.

From 1545 to 1600 it was $11,000,000 a year: in all $605,000,000; making the whole amount then received from America, $742,000,000.

From 1600 to 1700 it was 16,000,000 a year: in all 1,600,000,000; making the whole amount received from America $2,342,000,000.

From 1700 to 1750 it was $22,500,000 a year: in all $1,125,000,000; making the whole amount received from America $3,467,000,000.

From 1750 to 1803 it was $35,3000,000 a year: in all $1,87,000,000; and raising the total amount sent to Europe to $5,337,000,000.

From this estimate it would appear that in one century from 1500 the precious metals in Europe had received an accession of $740,000,000, or of 246 2-3 per cent.; in two centuries an accession of $2,340,000,000 or 780 per cent.; and in little more than three centuries the accession had been $5,335,000,000, or nearly 1800 per cent.

To ascertain the present amount of the precious metals in Europe and America, we must add to the amount drawn from the American mines—1. The amount in Europe before the discovery of America. 2. The amount in America at 1803. 3. The amount drawn since 1803 from the American, Siberian, and European mines, and imported from Africa. From their aggregate sum we must then deduct—1. What has been consumed by ware, or in the arts, and by losses at sea. 2. What has been transported to India and China. Thus:

The whole amount received from America including $25,000,000 of booty obtained by the conquerors of Mexico and Peru, as estimated by Humboldt. - -	$5,445,000,000
The amount in Europe in 1492. - -	300,000,000
The amount in North and South America in 1803, according to Humboldt. - -	153,000,000
Drawn from the American mines from 1803 to 1820, according to Mr. Gallatin -	750,000,000
Drawn from the same, from 1830 to 1850, at the same rate - - - -	555,000,000
The product of the mines of Europe, and the gold dust from Africa, according to Mr. Gallatin. - - - - - -	450,000,000
The same since 1830—at $7,000,000 a year —20 years. - - - - -	140,000,000
From the Russian mines - - -	270,000,000
Total, - - - - - -	$8,063,000,000

From this sum let us deduct:—

Consumed by the wear of the coin—about a five-hundredth part annually* -	$600,000,000
Consumed by wear of utensils, &c., and lost	700,000,000
Transported to India and China, according to Jacob, - - - - -	2,100,000,000
Total, - - - - - -	$3,400,000,000
Now remaining in Europe and America,	$4,663,000,000

which is less than Mr. Gallatin's estimate, and more than Mr. Jacob's.

It was the opinion of Adam Smith, from a comparison of the average prices of wheat in England through a series of years, that, in about a century and a half before the discovery of America, the precious metals had doubled in value; or, in other words, that the average price of wheat had fallen in that time from four ounces of silver a quarter to two ounces. This last price, he says, continued unchanged until about the year 1570, from which he infers that the mines of America seem not to have had any very sensible effect upon the prices in England till after that year; but in the course of the 70 years succeeding—that is, from 1570 to about 1640, or even 1636, there was a gradual depreciation of gold and silver to a third or fourth of their former value. From that period to the time he wrote—1775—he considered that the value of those metals had been nearly stationary; or, if not, that the value of silver had somewhat *risen* in the course of the eighteenth century.

If these views of Dr. Smith are well founded, we should be warranted in inferring that there would be no depreciation of the precious metals in Europe and America until the quantity now existing there shall have received an accession correspondent to that which had been made to the quantity previously existing in Europe before any depreciation took place. As Dr. Smith's language seems to admit that there might have been some slight depreciation before 1570, let us strike off ten years, and suppose that it begun in 1560. What addition has then been made to the quantity in Europe in 1492, when America was discovered?

From 1492 to 1500 the amount received from America was,	$2,000,000	
From 1500 to 1545, it was, -	135,000,000	
From 1545 to 1560 the average deduced from Humboldt's estimate was $8,000,000 a year -	120,000,000	
		$257,000,000

*This is indeed, less than Mr. Jacob's estimate, but more than Mr Gallatin's founded on the experience of the United States. He stated that the annual loss from the wear of coin in this country was $70,000 on $40,000,000 which is 1 to 571.

Deduct for wear and loss beyond the supply afforded by the mines of Europe, at about half of one per cent. - - - -	26,000,000	
Exported to the East, suppose $1,000,000* a year, - -	68,000,000	
		94,000,000
The whole accession from the American mines in 1560 - - -		$163,000,000

which is somewhat more than 54 per cent. on the amount believed to be in Europe in 1492; consequently we ought not to expect any depreciation whatever until the quantity now in Europe and America had received a similar accession of 54 per cent.—equal to $2,528,000,000—which would require a net annual addition of $50,000,000 in 50 years, or $100,000,000 in twenty-five years.

But these views of Dr. Smith must be received with considerable qualification. We now find, by the aid of lights which that eminent man did not possess, that his conclusions are not only irreconcilable to the estimates made by Baron Humboldt, but are inconsistent with one another, as may be thus shown.

The quantity of gold and silver in Europe, according to our estimate, increased between 1492 and 1560 from $300,000,000 to $463,000,000. From 1560 to 1640 the increase had been as follows:

Received from America between 1560 and 1600, $605,000,000, *minus* $120,000,000, - - - -	$485,000,000
Received between 1600 and 1640, according to Humboldt's, averages, $13,800,000 a year, for 40 years, -	552,000,000
Total, - - - - -	$1,037,000,000

From this amount a large deduction should be made for the extra loss by wear, &c., beyond the product of the mines of Europe, and for what had been sent to the East—probably from $250,000,000 to $300,000,000. Let it, however, be only reckoned at $200,000,000, leaving the whole amount to be $807,000,000, and the increase from 1560 to 1640 will then have been from $463,000,000 to $837,000,000 plus 463,000,000, which is equal to $1,300,000, or 280 per cent., instead of 300 to 400 per cent., as the depreciation is supposed to have been by Dr. Smith. Besides, a part of the increased supply

*This trade, except a small portion overland, was then carried on exclusively by the Portuguese. It was only about the last of the sixteenth century (in 1595) that the Dutch, their first rivals, made a voyage to India by the way of the Cape of Good Hope.

of the precious metals went, no doubt, to meet the increased demand for them, in consequence of the admitted increase of population and wealth, and such part would have no effect on depreciation. So large a part of the gold and silver received from America has been absorbed in this way, that though the quantity in Europe and America is believed to have increased fifteen-fold in three centuries and a half, the depreciation is never estimated at over one-fourth.

But whatever was the depreciation between 1560 and 1740, inasmuch as it was caused by an increase of the precious metals of 280 per cent., we must suppose that some depreciation would have also been caused by the increase from 1492 to 1540 of 54 per cent—that is to say, if 280 per cent., produced so much effect, 54 per cent. would not have been inoperative. It is true that Dr. Smith supposes, on grounds apparently good, that before the discovery of America the supply of the precious metals was less than the demand, and that they were therefore rising in value; and he rightly considers that such part of the products of the American mines as supplied the deficiency would have no effect in producing depreciation. But no indication that we have of that deficiency, and of the consequent rise of gold and silver, can lead us to estimate it at as much as 54 per cent. in 68 years. We must, therefore, infer, that while a part of what was drawn from America met the increasing demand for the precious metals and arrested their rise in price, a part also contributed to their depreciation.

But again: Dr. Smith always regarding the price of wheat as the standard of value, considers that there was no depreciation of the precious metals in Europe from 1640 to the time he wrote, or rather to 1784, when he published his last edition. In that period of 144 years, however, gold and silver had very greatly increased, and were, as we have seen, as follows:—

From 1640 to 1700, $1,600,000,000, *minus* $552,000,000,0000, - - - -	$1,048 000,000
From 1700 to 1750, - - - -	1,125,000,000
From 1750 to 1784, according to Humboldt's averages, $33,000,000 a year, for 34 yrs.	1,122 000,000
In all, - - - - -	$3,295,000,000

Although from this enormous amount we must deduct largely for wear and loss, and for the trade to the East, which had been steadily increasing; yet, if we make that deduction as much as one-half, the residue, $1,647,500,000—being an increase from $1,300,000,000 of more than 126 per cent—would lead us to the opinion that, while the larger part of the $1,647,-500,000 might have answered the demands of increasing numbers and wealth, a part also would have caused deprecia-

tion. Taking Baron Humboldt, then, as our guide in what before he wrote was a labyrinth of uncertainty and conjecture, we must believe that Dr. Smith has underrated the depreciation in the first and the last of the three periods on which he speculates, and has overrated it in the second period

These objections to Dr. Smith's inferences are confirmed by some facts recorded in that valuable reposity, Anderson's History of Commerce, to which we may briefly advert.

He cites passages from an act of Parliament passed in 1534, which afford satisfactory evidence that even then gold and silver had fallen in value, though the fact seemed not to have been suspected by the legislature. It states that "a good sheep, that used to be sold for two shillings and four pence, or three shillings at most, is now sold for six shillings, or five shillings, or four shillings at least; and a stone of wool, which used to be sold for one shilling and six pence, or even one shilling and eight pence, is now sold for four shillings, or three shillings and four pence at least." The act attributes the rise of price to the inordinately large flocks which many persons then kept, by which they secured to themselves a sort of monopoly, and by way of remedy strangely enacted that no one should keep, except on his own land, more than 2,400 sheep.

In 1670 Sir Josiah Child notices the increase of money in England within the preceding twenty years, which is after the point of time that Smith supposed depreciation had ceased. He says: "we give generally now one-third more money with apprentices than we did 20 years before." "The course of trade," he remarks, "from the increase of our money, is strangely altered within these 20 years; most payments from merchants and shopkeepers being now made with ready money," instead of a credit as formerly of 3, 6, 9, and 18 months.

In 1681 Puffendorf states the revenue of the king of France to be 150,000,000 livres, "whereas" he observes, "in the last age it did not amount to above 9,000,000 or 10,000,000; in Henry IV.'s time to 16,000,000, and in the year of 1639 to 77,000,000" "which vast difference" says Anderson, "is in part to be ascribed to the different value of money since those times, and partly also to the great taxes paid by his subjects."

According to D'Avenant, the general rental of England in 1600 was £6,000,0000, at 12 years' purchase, worth £72,000,000; but in 1688 the rental was £14,000,000, and worth, at 18 years' purchase, £252,000,000. But the increase of coin was yet greater. According to the same author, the coin in England in 1600 did not exceed £4,000,000, and in the beginning of the next century it was £12,000,000.

Anderson, after referring to a proclamation by Charles I. in 1633, to fix the prices of butter, poultry, game, &c., remarks:

"From the above rates, it appears that most of the usual eatables for the middling or lower ranks of people were near one-third cheaper than in our days; and he concludes that the rate of living then, compared with the rate of 1762 was about 2 to 3. If we suppose, as is generally done, that at the time Anderson wrote, the depreciation of silver since the discovery of America had been to one-fourth as 12 to 3; and he was right in estimating it between 1633 and 1762 as 3 to 2, or as one-third; then by deducting one-third of the whole depreciation, it appears that the remainder—that which took place before 1633—was as 8 to 3: and this was only three years before Adam Smith supposed it had been 3 or 4 for 1.

In truth, the standard adopted by Dr. Smith, though better than any other, cannot be implicitly relied on. As the demand for wheat, when it constitutes the bread of a community, is more steady than that of almost any other article, its price rises in scarce years, and falls more in years of plenty. There being less variation in the demand, there must be a greater variation in the price. Thus, we find in Dr. Smith's tables that in the sixteenth century the price of wheat ranged from 8s. the quarter to £4 2s. The improvements of husbandry tend to lessen this irregularity; but, in the seventeenth century the price ranged from 28s. to 85s.; and in the eighteenth century from 26s. to 76s. 6d. An unusual number of good or bad seasons, as occasionally occur, may greatly affect the average, and thus give us false views of the value of the articles with which wheat has been compared. Besides, if the population of a country increases faster than its improvements in husbandry, the money-price of wheat will rise without any depreciation.

While, then, we must infer that the depreciation of the precious metals began sooner and continued much longer than Dr. Smith supposed—probably to the early part of this century—we must see, after making ample allowance for these errors, that the precious metals, taken together, are not likely to undergo any sensible depreciation until their increase has made a near approach to 50 per cent of their present amount, or near one-half of $4,663,000,0000; nor to experience the same decline in value as was caused by the discovery of America, whatever that depreciation may be, until the quantity now in existence has also been multiplied fifteen-fold—that is, until it has reached the unsupposable sum of $70,000,000,000!

We have hitherto considered gold and silver together, because they were not distinguished in Humboldt's annual averages, and have been generally blended by those who have speculated on their depreciation, and because, moreover, it is possible that the increase of silver may be somewhat correspondent to that of gold. But since California has as yet produced only

gold, and the extraordinary richness and extent of this metal are now beyond dispute, let us suppose that the product of silver will remain stationary, or at least that its increase will not be greater than will meet the growing demand for an increase of population and wealth, and inquire into the probable effects of so large an addition to the gold of the world.*

Before the discovery of America the quantity of gold annually drawn from the mines, was supposed to be to that of silver as about 60 to 1; and their proportionate values were as 10 or 12 to 1. After several subsequent fluctuations in the relative quantities and values of the two metals, the proportion of gold to silver, in weight, annually drawn from the mines, has been for about a century, as 1 to 40 or 41; and such also has been the proportion in Europe, before the mines of the Oural mountains were extensively worked. The proportion of gold has been greatly augmented by those mines, and is likely to experience a far greater increase by the mines of California. The present value of gold compared to that of silver is 15 1-2 or 16 to 1. It has been rising to its present price from about 14 1-2 to 1 for the last 50 or sixty years; but the extraordinary productiveness of the Siberian and California mines, which, it deserves to be remarked, are on directly opposite sides of the same hemisphere, are about to make its price vary in the opposite direction.

It is generally supposed that, of the precious metals in Europe and America, about one-third part in value was gold, which, on the computation we have made, would be $1,554,000,000. For three or four years the Siberian mountains have yielded from $18,000,000 to $20,000,000 a year, which is believed to exceed the yearly product of all the rest of the world. The mines of California, though scarcely known to the world more than two years, appear to have produced from $12,000,000 to $14,000,000 last year; and from present indications the quantity this year will be much more than doubled. There have been already† received at the mint of the United States $11,352,000, and large amounts have already been sent to England, China, Valparaiso, and other places. In January last the number of persons at the mines, chiefly seekers for

* It is true that the annual product of silver has very much increased. Spain is now estimated to produce $10,000,000 a year; the Mexican mines bid fair to yield more than they ever did; and mines of that metal as well as of gold, of extraordinary richness, are known to exist in the Mexican province of Sonora; but it seems not at all probable that, from all the sources together, the present yearly product can be more than double; and this addition, being scarcely 1 per cent. on the quantity now existing in Europe and America, will not have, according to our past experience, a perceptible effect on depreciation. The increase of silver, whatever it may be, will indeed lessen or retard the comparative depreciation of gold; but while its rate of increase is so much slower, it cannot prevent that depreciation.

† On the 10th of June, 1850.

gold, were computed to be 40,000; and the average product of a laborer who is steady, is estimated there at $1,000 a month. Let us suppose that only one-half of the 40,000 are working in the mines; that they work only six months in the year—though many also work in the winter (in the dry diggings); and that *their* whole product for the year is but $2,000, or one-third the supposed average: the whole amount they would then produce would be $40,000,000; making the extraordinary accession of gold from the Russian and Californian mines for the year $60,000,000; which is nearly 4 per cent on the supposed amount of that metal in Europe and America, and 3 per cent, if we raise that amount, as some do, to $1,800,000,000. Now the average annual product of the American mines between 1560 and 1640—the period when Adam Smith supposes that nearly the whole depreciation took place—was less than $13,000,000, (12.9000,000,) and consequently less than 3 per cent, or $454,000,000, the whole supposed amount in Europe in 1560, the commencement of that period.

But the quantity yielded by the California mines will continue to increase, if they make any tolerable approach to the confident representations given of their fertility and extent. They will be wrought by greater numbers, and to greater advantage. They will attract immigrants from every part of the United States, and even from other countries; and time only can show to what degree their products will be multiplied. Should they reach $100,000,000 a year—and they may pass greatly beyond that amount—the annual addition would be 6 2-3 per cent. on $1,800,000,000, which more than doubles the past contributions of the American mines in their greatest productiveness.

What are to be the effects of this enormous and unprecedented increase of gold.

1. One of the most obvious and necessary results will be to alter the proportion between the value of silver and gold. Whatever may be the depreciation of gold, it will be shown by this alteration, if the value of silver be stationary. We have seen that gold compared with silver rose in the course of three centuries and a half from 10 or 12 to 1 up to 15 1-2 or 16 to 1. We have even seen it rise, in little more than half a century, 6 or 7 per cent.; and the alterations which thus took place in the comparative facility of procuring these metals, and consequently in their relative abundance and price in *many years*, will now take place in a *few years*, and produce a similar effect. The annual product is already five or six times as great as it formerly was from the mines of Brazil and Spanish America; and it is likely, in a few years, to be ten, probably twenty times as great. In some three or four years—perhaps sooner—we may expect gold to fall from 16 for 1 to 15 for 1 of silver;

and the same cause continuing, it will probably go on declining to 14, 12, 10, for 1, as it was in some parts of Europe before the discovery of America, and yet lower. The point at which it will stop time only can show.

There are indeed natural checks to this downward course, to which we may briefly advert, though dependent as they are on so many contingencies, we cannot now measure the extent of their operation. The sure effect of the depreciation of gold will be both to increase the demand for it, not only in quanti y, but in value, and to discontinue the working the least productive mines; by which double operation on the supply and demand an equilibrium between the two will, sooner or later, be restored. Should gold fall to one-half of its present price—that is, to be only eight times the value of silver—the real value expended for it in utensils and ornaments would be not merely double, but greatly beyond that proportion, as we have seen in the demand for both metals since the discovery of America; and this extra demand tends to check depreciation. So, on the other hand, many mines that were profitably worked when gold was sixteen times as valuable as silver, will cease to reward the laborer, or to reward him sufficiently, when it has fallen to only eight for it, by which means one source of supply will be cut off.

2. Another consequence will be that in all countries in which gold continues to be a legal tender, its depreciation will injure creditors and benefit debtors, according to the extent of the depreciation and the duration of their contracts. This of course applies to all national debts. Legislatures in countries in which gold is the standard, either solely or jointly with silver, if at once prudent and just, will make the latter metal the exclusive standard. When the question of a single or double standard was agitated in this country some years since, Congress, apparently influenced by the opinion of Mr. Gallatin, decided in favor of both metals. It then appeared to some that that distinguished man, usually so sound and practical in his views, had not, in relying on the example of France, where both metals are legal tenders, sufficiently regarded two important points of difference between that country and this, to wit: the greater proportion of paper currency in this country, and that here coinage is gratuitous, while in France it is subjected to a seignorage; which circumstances defend her from the inconveniences of a double standard to which we are exposed.* The experience of Russia, and indeed our own experience, show that gold will not cease to circulate as coin because it is not a legal tender.

* The advantages of a double over a single standard, and of silver over gold for that standard, were fully discussed by the writer of this article in his essay on Money and Banks, published in 1839, to which he begs leave to refer the reader.

3. The greater cheapness of gold will benefit the world by making that beautiful metal attainable by a larger number of persons, and to a greater extent. In this way it will multiply gold watches, gold ornaments for the person, silver-gilt utensils, and gilding generally; but it will, at the same time, also lessen the value of all the gold previously in existence. This gain and this loss will be confined to the wealthy classes of society; but as to that portion of gold which is in coin, the depreciation will be an uncompensated loss to all countries who so use it. If gold were to decline in value 50 per cent., double the quantity would be required to discharge the same functions of money as before; and consequently, the cost of keeping up the original circulation would also be 50 per cent. of its value at the time. Where the specie currency is principally gold, as in England, this loss would amount to £30.-000,000 or £40,000,000, that is, from $150,000,000 to $200.-000,000.* It would thus be found that while the Californians were enriching themselves by their fertile mines, they were deducting from the wealth of all the rest of the world.† It is totally unimportant to the wealth of a nation whether its coin consists of ten million, fifty million, or one hundred million pieces; but it is a serious deduction from that wealth, if,

* Individuals who hoard money, holders of stocks, and creditors generally would be losers by a depreciation in the value of the precious metals: but we cannot perceive the principle whence the author draws his conclusions, that a decline in the value of gold would result in a loss to a country at large. It may be admitted as a general remark, that the value of the precious metals rises in proportion to the distance from the mines; but this proposition is subject to very many modifications: it would be more correct to say that, like all other commodities, the precious metals rise in value in proportion to the amount of labor, time, and risk, incurred in obtaining them

Should the product of gold in California be so great as to affect its value materially, in other countries its decline in the United States would probably be greater than in England. Under this state of facts the price of British products would advance in our markets, and that country would draw a larger amount of the precious metals from this, without increasing her exports. And were this condition of things to continue until gold declined 50 per cent. in England, yet that country would cease not to gain a national point of view. It is true that the gold which she possessed before the depreciation commenced would have become less valuable as money; but the depreciation would be fully compensated by the increase in quantity, and, the advance in the price of her products: and, according to our view of the subject, there is not the slightest ground for the conclusion that England would lose $200 000,000 by such a decline in the value of gold; or, that she would be compelled to buy more gold to keep up her circulation, as supposed by the author. SENIOR EDITOR.

† However plausible this conclusion may appear, the results contemplated would never happen, let the gold of California be as abundant as it may; for it is not in the nature of things that any country can grow rich by producing gold; and it is contrary to the law of commerce that the production of gold in one country should deduct from the wealth of others. It is true that those engaged in mining are fed and clothed by the labor of others; but the countries who furnish them with the necessaries and comforts of subsistence are fully compensated by the augmentation of their circulating medium: for an increase of money, when obtained by the natural laws of commerce, is calculated to promote industry and quicken the development of all the resources of a country. SENIOR EDITOR.

when fifty million is sufficient for its circulation, it is compelled to buy fifty million more, though at half the former price.‡

However little the world in general may be benefited by the abundance of gold in California, its local effects are likely to be very great.

4. By the resistless attraction of its gold, the settlement of that country will advance beyond all example. Already its population has grown in two years from ten thousand to one hundred and fifty thousand; and the stream of immigration, both round Cape Horn and across the continent, still flows on with unabated force. It is likely to continue until the average profits of mining labor does not exceed, or much exceed, that of other occupations—at least in the United States. When greater facilities for going thither from the Atlantic States shall be afforded by railroad or canal, the number of adventurers will be prodigiously multiplied.

5. The commerce of California with the East—which, however, is the west to them—must soon be very great. As in China, the precious metals are dearer and labor cheaper than in any other part of the world, and in California gold is cheaper and labor dearer than elsewhere, there is the greatest possible encouragement to trade between the two countries; and this interchange, creating a great and growing vent for gold, will tend to lessen its depreciation.

6. In consequence of California being a part of the United States, and most of its inhabitants having emigrated from other parts of the Union, the larger portion of its gold is likely to find its way to the Atlantic States, especially when there shall have been an easier communication between them across the Mexican isthmus. Gold is then likely to be cheaper and more abundant in the United States than any other part of the civilised world. We know that the value of the precious metals rose in value in proportion to their distance from the mines, so that it was cheaper in Mexico and Peru than in the west of Europe, cheaper there than in the east of Europe, and cheap-

‡ This is a proposition that cannot safely be denied: and yet, it is true in a sense so limited that it cannot be admitted without danger of falling into error. If a nation possessing 150,000,000 pieces of coin were to reduce the number to 10,000,000 by a recoinage, the quantity of metal might remain the same; but surely it would not be capable of performing the same offices in the economy of the community. Suppose all our coin should be returned to the Mint, and no piece be issued of less value than ten dollars, and imagine all paper money to be prohibited: in such case the use of money would be limited to, comparatively, a small portion of the community; and in much the larger portion of transactions which occur, the parties would be driven to the necessity of bartering. And although in one sense the value of the metal would remain the same, yet, its value as money would be greatly abridged; and it would not be long before the wealth of the nation would suffer a rapid decline.

We are persuaded that the learned Professor did not examine the consequences of an increase of gold with his usual sagacity; for had he done so, we think he must have discovered several material errors in his conclusions. Sr. Editor

er there than in India and China. It will, therefore, be very easy for the State legislatures to make gold coin take the place of the small bank notes. Those institutions would find some compensation for the diminution of their profits in their greater security; and the public would be unquestionably benefited by the change. This further employment of gold would, by the quantity it would absorb, also somewhat retard the depreciation.

7, 8. Two consequences may be expected from this great increase of gold in the United States. One is, that the gradual enlargement of the circulation will have its usual effect of giving a spring to useful enterprise and productive industry of every kind. This is the use of an augmented currency. The other may be regarded as its abuse. Our banks, being the chief depositories of the new accessions of gold, will be thereby enabled to add to their profits by extending their loans; and, judging from past experience, this state of things, by distending the currency, is likely to engender a wild spirit of speculation, and inflated prices of most articles, especially of town lots, and every species of real estate, since they cannot be affected by competition from abroad.

Such seem to be the prominent effects to be expected from the unexampled richness of the California mines. Should these views prove to be correct, they will, in a few years, have brought about a revolution in the monetary concerns of the civilised world.

From the Southern Planter.

ART. IV.—HOW THE NATIONAL OBSERVATORY IS SUBSERVING THE INTERESTS OF THE FARMER AS WELL AS OF THE MARINER.

We are much gratified that Lieutenant Maury has directed his attention to the currents of wind on the continent as well as on the ocean; for we are persuaded that if he can induce the agriculturists, as a body, to take a tithe of the interest in this subject on land, that has been evinced by the mariners at sea, his labors will prove not less useful to the production, than to the exchange of our leading staples.

No individual can become an accomplished agriculturist or horticulturist without understanding the laws which control the meteorological phenomena of the particular location of his labors; and also the influence which these phenomena exert upon the growth, habits, and final development of the plants which he proposes to cultivate. Indeed we regard the science

of meteorology as being scarcely less important to the agriculturist than that of organic chemistry; and yet, its connection with the most important of all pursuits, has received but little attention from either the practical farmer or the man of science. We endeavored to illustrate the importance of this subject in the first number of the "Western Journal," but, as far as we know, our views produced no impression on our readers; we trust however, that the name of the author of the following article will incite, in at least, a portion of the agricultural community, a spirit of observation and inquiry. And we sincerely hope that some of our readers will undertake to make observations on the several points indicated by Lieut. Maury, and make the results known for the benefit of science. EDITOR West. Jour.

MR. EDITOR,—You are aware that a few years ago, I commenced to overhaul musty sea journals, and to get my sea-faring friends to explore garrets for retired sea charts—old sea chests are very apt to contain old log-books,—thinking that from these sources, observations of great value might be obtained touching the winds and currents of the sea; provided these observations were brought together, compared and discussed.

With the materials thus obtained, I went quietly to work, and with the assistance of Lieut. Whiting, U. S. N.—an admirable draftsman—constructed a sort of sample chart, that navigators, whose assistance I intended to ask, might have correct ideas as to what I proposed to do.

They understood the object at once, appreciated the undertaking, and in true sailor style, came forward with offers of a helping hand "right off the reel."

Thanks to these bold seamen. I have now not less than one thousand American merchantmen engaged daily in collecting, from all parts of the navigable ocean, materials for the "Wind and Current charts," as the series is called.

The only way by which we can hope to obtain a correct knowledge of the laws which govern the general circulation of the atmosphere, is by an extensive and extended series of observations such as this is.

On the land, you have the exception: The winds are interrupted in their course by mountain ranges, are turned aside by deserts and highly heated sandy plains. But away out upon the blue water, where there are no irregularities of surface, and no unduly heated districts to interfere with the general laws which rule the winds, there we see them in operation.

Upon the study of these laws, I have been closely engaged. It would be in vain to hope for an interpretation of

them, unless with the assistance of such zealous and patient co-laborers as are the officers of the navy who are engaged with me upon the work, and their task would be a fruitless one unless they had numerous and oft-repeated observations in the most distant parts of the ocean to guide them.

These materials are afforded by American ship-masters; and to my mind, it is one of the most beautiful moral spectacles that was ever beheld, is this voluntary assistance rendered by more than a thousand sailors—freemen all—in the conducting according to a regular system, a series of observations in all parts of the world, at all hours of the day and the night, in the storm and calm, for the advancement of science.

This is an undertaking which Solomon's Exchequer could not have borne; yet here, in Republican America, it is undertaken at the instance of a subordinate officer of the navy, without power or patronage of any sort, and without cost or expense to any public fund whatever.

Never was there before such a corps of observers engaged in concert upon any subject of philosophical research. It speaks well, does it not, for the American sailor? It is an offering made by him to his country in acknowledgment of the effect of her free institutions upon his mind.

But what, you and your readers are saying to yourselves, what have these investigations and the work at the Observatory, to do with farming and planting?

They have almost as much to do with agriculture as with navigation; and they concern the husbandman as much as the ship owner. The winds are every thing to the sailor; and climate is all in all to the farmer, for the one can get along quite as well without a breeze, as the other can without rain. And those who live on dry land must have winds to bring to them from moist places, the rain and dews of heaven.

The vapor which is first condensed into clouds over our heads, and then into fruitful showers for the husbandman, was taken up from the sea, and brought to its place of precipitation by these winds whose courses and laws these sailors are assisting me to find out.

The task is far from being completed; yet the undertaking has already been so far crowned with success, that any one who will study the results of these observations as developed in the charts, can tell in what part of the world it is now the rainy, and in what part the dry season.—He can point out to you the rainless districts.—He can show you the basins on the land in which the quantity of rain that falls, exceeds the quantity of water that is taken up again by evaporation.—He can distinguish these basins from those in which the precipitation and the evaporation are equal.—He can pick out for you the hot climate and the cold; and tell you what places have

a warmer and what a colder climate than that which is due their latitude. And futhermore, he will explain to you the causes of all these phenomena; and show you, by the charts, evidence not to be mistaken, that the winds of heaven and the currents of the sea are as obedient to law and order, and as harmonious in their offices as are the planets and the morning stars in their orbits and songs of praise.

He finds a current of warm water running from the Gulf of Mexico, over to the shores of Europe, and tempering the climate there. He finds a stream counter to this bearing down ice-bergs, and bringing a stream of cold water along our own shores; he discovers like phenomena in other parts of the world.

With these charts spread out before him, he will explain how these streams of warm water so modify the temperature that, in certain parts of the world, as in Oregon or Norway, if you wish to change your climate, you must not change your latitude but your longitude. Differences of climate there are soonest reached, not by travelling north or south as with us but by travelling east or west.

He will perceive that the winds which circulate over America, are for the most part fresh from the ocean, while those which cross Africa come mostly over the land from Asia, upon whose high mountain tops they have precipitated all their moisture. Hence, he will tell you, that Africa for the most part is a dry country; America in comparison, a wet one. And in proof of this, he will point you to the arid plains there, and to our great rivers here, as the Amazon and the Mississippi, maintaining that the quantity of water annually discharged by them, is but another expression for the difference between the amount of rain which falls in, and the amount which is taken up from, the valleys that are drained by these rivers. The charts teach him to regard rivers in one respects at least, as great rain gauges set up by nature for her own manifold purposes.

He will show you how the waters that run down the Amazon river and its tributaries are taken up by the winds of heaven from the Atlantic Ocean, and carried in invisible streams through the air, to the sources of these rivers in the upper country; and he will almost prove to you, from the reasoning of the charts that the waters which run down the Mississippi river are evaporated from the Pacific ocean, and brought by the clouds and the winds across the mountains to fertilize and fructify that teeming valley.

And then with a hymn in his heart, he will sing you in silence his song of praise; and whisper you that these investigations have, in his mind, converted the Andes, the Cordilleras, the Sierra Nevada, and other lofty mountain ranges of the continent into everlasting monuments of the wisdom and the goodness of God.

Ask him how? And he will show you that the N. E. and the S. E. Trade Winds, having blown across the broad Atlantic, reach our shores charged with moisture, which moisture as it gradually loses the heat that holds it in a state of vapor, is as gradually precipitated over the plains and valleys until it reaches the tops of those snow-capped mountains—on which the last drop of water that that very cold temperature can wring from those winds, is precipitated. These winds then tumble down into the valley beyond, as in Peru, cold and dry winds without moisture enough in them to make rain of. Now if the Andes and Rocky Mountains had been stretched along the eastern instead of the western coasts, their chilly heights would still have condensed from these winds all their vapor, and all of this prolonged western slope would have been what the abrupt Pacific declivities are; rainless and barren districts.

In these charts too, he will acknowledge at least one of the offices which the Great Desert of Sahara performs in the grand and beautiful system of cosmical arrangements. For by these observations, though made far off at sea, he will see that when the sun is pouring down his rays with greatest intensity upon those arid African plains, the regular course of the Trade Winds over a large portion of the Atlantic is altered, and that instead of blowing *from* the Desert, they blow directly *towards* it—so great is the rarefaction there. These winds, coming from a tropical sea, are necessarily loaded with moisture; and being turned back, they precipitate their showers along the western coasts of inter-tropical Africa, divide the seasons there into wet and dry, and make that country habitable for man.

Bearing in mind these and the other facts which are told by the charts, and recollecting a few philosophical principles, we shall see how directly these investigations at sea bear upon the productive capacities of climates on the land.

These principles are: that the hygrometrical state of the atmosphere, as well as the state of the climate as it regards temperature, is an element in the adaptation of climate for this or that article of agricultural produce. That by raising the temperature of the atmosphere, its capacity for moisture is increased—and that by cooling it, its capacity for moisture is diminished—and consequently, that when an atmosphere, charged with moisture at a given temperature, is subjected to a higher temperature, it will deposit none of that moisture either in the shape of dew, fogs, rain, or any other of the forms of precipitation. And finally, that each agricultural staple and every fruit of the earth require a peculiar combination of wet and dry weather for its most perfect development—and that where these combinations are found with soil to suit, there is the place most favorable for the cultivation of

that plant, whether it be corn or cotton, sugar, coffee, rice, tobacco, hemp, grapes, &c.

We often hear it said "good grapes are grown and excellent wines are made in Europe, and along the parallels of latitude upon which we dwell; why therefore should we not plant the vine, cultivate the grape and produce our own wines here also?" Upon such a process of reasoning large sums of money have been wasted, both by governments and individuals in attempting to introduce the culture of this or that staple in districts and regions, where it is only necessary to know whence comes the winds that supply those districts and regions with moisture, in order to decide as to the adaptation of such climates for such staples.

England has expended large sums in attempting to introduce the culture of cotton in India. Now if her wise men had had the advantages of the facts with regard to the winds which these Yankee sailors are gratuitously collecting for me in every sea, they would have seen at once, that though the plant may *grow*, it will not flourish there. The winds there come for a part of the year from the sea, and for the other part from the land; consequently at one season, they bring too much, and at another too little moisture for that plant.

Cotton may *grow* along some of the sea coasts of Africa, and along narrow strips of New Holland; but there are no extensive regions in the world adapted—I speak not of artificial appliances as irrigation—to the vigorous development of this plant, except in China, the United States, and the valleys of the Amazon and Rio de la Plata.

The winds which circulate over these countries come from the same relative places; they come across the sea, and bring to the land continually fresh supplies of moisture, which is daily deposited in plentiful showers upon this or that place.

Tea will grow in Brazil; but that grown in the climate of Rio will be to the tea of China a little worse than the cotton of India is to our sea island.

Mr. Smith is not wrong in supposing that *good* tea may be grown in South Carolina. Indeed my investigations upon the winds and currents of the sea give reason to believe, that *if the soil be thin*, tea may be grown as high up as Virginia and Tennessee, if not higher. But whether it can be *profitably* grown is another matter.

To pick 13 lbs. of leaves in China a day, is the work of a man. His wages are about 6 cents a day. After this, the tea has to be passed through the various processes of heating, poping, rolling, drying, &c., before it is ready for the market; all of which as practised in China are tedious and troublesome, and would be here expensive, operations. I speak not of what Yankee ingenuity may do in the way of curing and gathering by machinery.

My investigations also show—always supposing the soil to be *there*—that cotton, sugar, coffee, rice and tobacco and indigo, with spices, drugs and balsams of infinite variety and great value, may be grown from the mouth of the Amazon all the way up to the base of the Andes—and they point to the valley of that river and its tributaries as one of prodigious capacities—of productive capacities as far exceeding those of our great and greatly boasted Mississippi valley, as this exceeds that of the Hudson. The valley of the Amazon is rich, wide and fruitful beyond measure.

These investigations also indicate what, upon inquiry I learn is the case: that there is a wet and a dry side to the Allegheny Mountains,—that in some parts of the range, the eastern, and in others, the western side is the dry side. Good grapes I am sure will grow on these dry sides, and it is probable that they would make good wines.

We know how powerfully the presence of abundant moisture in the atmosphere affects the flavor of our delicate fruits; at certain stages of the crop a few days of rainy weather will destroy the flavor of the strawberry, the peach, etc.; and we know that the grape requires sunshine and dry air to perfect its secretions.

The finest grapes in the world are grown near the Caspian sea, where Humboldt tells us the air is so pure that the most finely polished steel may be exposed in the open air for days and days without having its lustre tarnished. This is but another expression for a low dew-point, or a dry atmosphere. There the evaporation, and precipitation, as in our own valley of the great Salt Lake, are exactly equal.

Though there may be here and there under the mountains of Georgia, the Carolina, Virginia, Tennessee, &c., small districts adapted to the production of wine, these charts "of the winds and currents of the sea," indicate that there is on this continent a large district, the climate—for I know nothing of soils—of which is admirably adapted to the culture of the grape. That climate is in Northwestern Texas and the region thereabout.

I may be excused from mentioning another discovery with regard to the culture of the peach and other fruits to which I have been led by some experiments with the thermometer on a fleece of wool.

I procured a bit of tanned sheep skin with the wool on, placed it with the woolly side up, in a bucket as though I intended it for a hen's nest; I then put a thermoneter in it with the bulb in the bottom of the nest; and set it out in the open air.

This thermometer, of certain clear nights in August, when the thermometer on the outside of the nest and also in the open

air stood at 75dg. and when that in the nest during the day had ranged as high as 150dg. was found to stand at 42dg.

This explained to me the reason of our finding in the low lands and bottoms the earliest signs of frost in autumn, and the latest in spring.

These are the places therefore, which in clear weather, when radiation is active, are the hottest in the day and the coolest in the night. And if you plant the peach there, they will force its blossoms in the day, and nip them with their frosts at night.

Now, on the hill tops and sides, the weather is cooler in the day, and warmer in the night when radiation is active — consequently the hill tops and sides will not force the buds so soon, nor make frost, nor kill the fruit when the bottoms will; and therefore the hill tops and sides, not the bottoms, are the places for orchards.

There is a ridge about Washington upon which the peaches seldom fail, when failure is common to orchards planted a short distance from it on either side.

Travelling last summer through the beautiful valley of Wyoming, I noticed near Wilkesbarre, that with fine mountain ridges close at hand, the apple orchards were all in the river bottoms—the worst possible place for them—and on inquiry was told—what I knew would be said without asking—that it was a poor fruit country.

The best fruit growing height for each district must be determined by actual experiment; and I have no doubt if the farmers of Wyoming valley would cut down their fruit trees in the river bottoms, and plant an orchard reaching from near the base to the top of the surrounding hills, they would discover the best apple growing elevation; and planting orchards at this pitch, they would probably be rewarded with fine fruit.

I have been led into these remarks with the hope of interesting the farmers and your readers in my investigations. If I succeed perhaps they will join with the sailors and assist me also by their observations for the "wind and current" charts. The observations which I particularly desire to have made on the land, are those which will answer the following questions, which each observer will consider as addressed particularly to himself.

What are the winds that bring rain to you?

What is the situation of your farm with regard to the mountains or the sea coast?

What are the fruits and agricultural staples that are best adapted to your region of country generally; what to your farm?

I will consider it a great favor to have replies to these interrogatories addressed to me at Washington, by letter.

I may be permitted also to suggest to farmers, planters, and agricultural societies, and to those persons in the country generally who are in the habit of keeping private meteorological journals, the importance of making them public, and of connecting with them records as to the dew point, and as to the flowering of different kinds of plants, fruits and trees—especially as to the budding, the flowering and the ripening of the whortleberry, which I believe is found in almost all latitudes, between the parallels of Siberia and the Equator.

Permit me to add a few words in explanation of observations as to the dew point, in addition to those usually made by persons as to the thermometer, barometer, the wind and rain gauges.

It will appear obvious to all, from what has already been said, that when we know the latitude and range of the thermometer where this or that article is grown, we know really very little as to the *climate* suited to its growth. To determine that, we want to know also the quantity of moisture in the atmosphere as well as the quantity of rain that falls. An atmosphere may be very humid, still it may give out comparatively but little rain, though it may afford the plant abundant moisture. Thus we sometimes see, particularly in limestone regions, the rocks, where they crop out in dry places, dripping with moisture, though there be not a cloud in the sky. The farmer will tell you it is a sign of rain, and the meteorologist will say it indicates the same, for it shows that the dew point is high; in other words that a humid atmosphere is present.

The most convenient method of observing dew point is this: Put water in a bright tin or silver cup, taking care that the water be not cold enough to cause a deposit of moisture on the *outside* of the cup; then put ice in, and stir it with a thermometer until the first appearance of deposition is seen on the outside of the cup. The height at which the thermometer in the cup stands at this moment, is the dew point.

Care should be taken to make this experiment in the open air; and this method will give the dew point when it is not below 32 deg., which is generally the case in all the seasons except the winter, when vegetation is less active, and therefore when the observation is not of so much practical importance to the farmer.

At the same time that the dew point is observed, the height of the thermometer in a good shade exposure should also be observed. This should not be neglected; for it is the difference between the thermometer in the cup and in the shade, that affords one of the terms for expressing the elasticity of the vapor in the atmosphere.

Many who may be disposed to make these observations may

not have access to an ice-house. In such cases, the next best thing is to observe what is called the "wet bulb."

For this, take a common thermometer and tie around the bulb a *thin* piece of fine old linen, cotton or silk rag—wet it with water that has been standing in the open air for some time, and long enough to take the temperature of the air; after the bulb has been wet for about five minutes, and exposed to the open air, note the thermometer.

At the time the wet bulb is noted, note also, as in the other case, the thermometer in the shade.

In the course of a short time your agricultural societies would find these observations of great value. I have no doubt you, Mr. Editor, would publish them with pleasure, and to serve the community and oblige your friend,

M. F. Maury,
Lieut. U. S. N.

ART. V.—CHARLESTON AND MEMPHIS RAILROAD.

We are pleased to learn that this enterprise is likely to be commenced under circumstances which promise a successful prosecution of the work. We see it stated in a southern paper that a reconnoisance has been made by the chief engineer, and that actual surveys have been commenced on the eastern part of the line.

In a letter to Gov. Jones from C. F. M. Garnett, Chief Engineer, he says:

"All the routes examined are practicable, and nothing but actual survey can determine with certainty the one which should be selected. With but few exceptions, no Railroad in the Union will be found to pass over ground more favorable for such a purpose. The whole road cannot exceed 280 miles in length—and of that, all except perhaps 40 miles, will be made at a very small expense, compared with the cost of most other Roads, even in the South.

"I will not venture, without calculation, based on positive data, to name the smallest sum for which I now believe the road could be made. But I am willing to hazard the assertion, that the entire road could be completed and fully equipped for $3,500,000. In no event can it exceed that, and it may fall very far short of it.

"Were it not for the restrictions imposed on themselves by the Stockholders of this Company the work might now be commenced with perfect safety."

Should the cost of the work not exceed the engineer's estimates, it will, doubtless, be one of the best dividend-paying roads in the Southern States. For, although the transportation of produce and merchandise may not equal that of other lines, it must become a more important thoroughfare of travel, from east to west, than any road terminating on the Mississippi river, south of St. Louis. Nor will its benefits be limited to the stockholders or to the district of country in which it is located: but in many respects it may be regarded as a national improvement.

It will, in time, connect Memphis with all the principal cities on the Atlantic, from Florida to the Mouth of the St. Lawrence; and, at once, places it in a new light before the people of every part of the country. We leave it to those more immediately interested in the growth of that city to calculate its destiny: to them, it is an individual concern: but the people throughout the entire valley of the Mississippi are interested in its prosperity; for it matters not at what point on this great river commerce and manufactures shall be established, their benefits must be shared in common by all who dwell upon its waters.

We must transfer the location of money capital from Europe, and, from the Atlantic cities, to the shores of the Mississippi, before we can establish a system of commerce of our own; and this transfer can only be effected by building up commercial and manufacturing cities. Dealers in money, except upon a small scale, are not pioneers: they never locate in rural districts, nor small towns; but wheresoever commerce establishes her stations there will they resort, and there locate. It is folly to expect commercial capital to locate in the West until we have built up commercial cities; and these can only be established, in the view of capitalists, by carrying into effect a system of internal improvement, designed to protect them against competition.

That there will be other railroads terminating at different points on the eastern shore of the Mississippi there can be no doubt; but this, must ever be the great avenue between the Atlantic States of the South, and the region West of the Missippi—overcoming the geographical divisions which obstruct social and commercial intercourse, and more firmly uniting the inhabitants of the South and West in one common destiny. Then, we ask, what shall be the reward of those who have labored for the consummation of such noble ends?

MISSISSIPPI AND ATLANTIC RAILROAD.

A company has recently been organised in Illinois under a law passed at the last session of the General Assembly of that State, for the construction of a railroad from Terre Haute, Indiana, to Illinoistown on the Mississippi river. At a meeting of the stockholders, held at Vandalia on the 29th of July, 1850, the following Articles of Association were adopted :

Articles of Association of the Mississippi and Atlantic Railroad Company.

In conformity with an act of the General Assembly of the State of Illinois entitled, "an act to provide for a general system of Railroad incorporation,' the undersigned have associated for the purpose of constructing, owning, and maintaining a Railroad as set forth in the following articles:

1. The name of said corporation shall be the Mississippi and Atlantic Railroad Company.

2. The same shall continue fifty years from the date of its incorporation.

3. The amount of the capital stock of said company, including the cost of constructing the road, the right of way, motive power, and other appurtenances for the completion and running of said road, as near as can be estimated by competent engineers, will be two millions of dollars, making forty thousand shares at fifty dollars each.

4. There shall be seventeen Directors to manage the concerns of the company, as follows:—

Justin Harlan, James V. Hedges, William B. Archer, Lora Corey, John Cutright, James Ewart, John Waschefort, Presley Funkhouser, Robert Blackwell, Francis Gill, Henry C. Waterman, William S. Wait, Benjamin Johnson, Samuel White, William M'Cain, Curtis Blakeman, and Solomon H. Mudge.

5. The Road to commence at a convenient point on the State line, to connect with the Terre Haute and Richmond Railroad, taking its course through the counties of Clarke, Cumberland, and through, or near, the North West corner of Jasper county, and through the county of Effingham, and to Vandalia in Fayette county, and from thence through the counties of Bond and Madison, and through, or near, the Northwest corner of St. Clair county, and to terminate at, or near, Illinoistown, on the Mississippi river, and as nearly opposite to the eastern termination of the contemplated Pacific Railroad as practicable—a distance of one hundred and sixty miles, or thereabouts.

6th. Nelson D. Swaney, Salmon A. Phelps, M. G. Dale, N. M. M'Curdy, and Dean Andrews are appointed Commissioners to open books for subscription to the stock of said Road. Report unanimously adopted.

At a meeting of the Directors on the 31st of July, the following gentlemen were chosen Officers of said Company:

William S. Wait, President; H. P. H. Brownell, Secretary; Ebenezer Capps, Treasurer; and W. H. Morrison, Engineer.

The following resolution, which was adopted in the meeting of Stockholders, evinces a strong confidence on their part that the work can be successfully prosecuted without aid from the General Government, and affords an instance of public spirit and liberality highly creditable to the Company.

"*Resolved*, That the interest of the State of Illinois, and of the entire West, would be essentially promoted by the construction of the Central Railroad of Illinois, and that we have noticed with much pleasure the liberal grant proposed in Congress for the encouragement of that work; and, having reason to apprehend that the passage of an act in aid of that important work is embarrassed by the attempt to connect it with donations for other objects among which is the enterprise in which we are engaged, we desire that it may be understood that whilst anxious to receive the national aid to promote our object, we ask for no connection, with a reasonable grant for the Central Railroad, which may hazard the fate of that donation; and we hereby request of our Senators and Representatives in Congress, that so far as the interests of the Mississippi and Atlantic Railroad are concerned, those interests may not be urged upon the consideration of that body, if found to conflict with or endanger the bill granting a donation to the Central Railroad of Illinois."

We are always gratified to meet with sentiments like these. They challenge the respect of all men; and in this case are calculated to place the Mississippi and Atlantic Railroad Company on high ground in the estimation of the community. Under the direction of individuals actuated by such elevated sentiments, there could be little doubt of the success of the enterprise, even if the improvement proposed possessed no extraordinary merit. But when it is recollected that the Mississippi and Atlantic Railroad is the last link in the great chain of railroad improvement connecting all the great cities on the Atlantic with the Mississippi river at a point nearly central between its mouth and its highest navigable point, and, that every part of the fertile region between the Atlantic and the Mississippi, north of the Ohio, is interested in its construction, we are led to the conclusion that the force of circumstances will impel this work onward to its completion in a shorter time, perhaps, than any work of equal magnitude has ever been accomplished in this country. All that is required to insure the completion of this part of the great line from the Atlantic to the Mississsippi, is a just and liberal course on the

part of the Illinois Legislature, provided it shonld be found that the Company have not the right to fix the termini of the road under the present law—a point on which we give no opinion, as we have not seen the law of Illinois under which the Company have organ sed. To those who have put their hands to this great work we say, go forward, you are engaged in an enterprise that must succeed—that must impart new life to the energies of your State—develope its vast rescources—and place your individual names among those who shall be esteemed benefactors of the age.

From the American Railroad Journal.

LIST OF RAILROADS IN THE UNITED STATES IN 1850.

We give in this number what we believe to be a complete statement of the number of miles of railroad for passenger transportation in the United States. In New England and New York we have given the exact number of miles in each State, as we had means of ascertaining the distance traversed by the several roads in each. In some of the other States we have not gone into this exact division, and lines that are put down in one State and in some cases extend into others.

There is a large extent of *coal* road in Pennsylvania which is not embraced in the table.

MAINE.	Miles.	Rates per mile.
Adroscroggin and Kennebec, - -	55	2·73
A lantic and St. Lawrence,* - -	47	2·97
Buckfield branch, - - -	12	2·91
Bangor and Piscataquis, - - -	12	3.16
Kennebec and Portland,* - - -	25	3·00
Bath branch, - - - -	9	2·77
Portland, Saco and Portsmouth, - -	51	2·78
Calais and Baring, - - -	3	
Machiasport, - - - -	8	
Boston and Maine, - - -	3	
	225	
NEW HAMPSHIRE.		
Boston, Concord and Montreal,* - -	51	3·03
Cocheco* (Dover to Farmington, - -	18	2·77
Concord,† - - - -	35	2·28
Concord and Claremont,* - - -	25	3·60
Contoocook Valley,* - - -	14	3·21
Franklin and Bristol, - - -	13	3·69
Great Falls and Conway,* - -	9	2·22
Manchester and Lawrence, - -	26	2·50
New Hampshire Central,* - -	10	3·00

Northern (Concord to W. Lebanon,)	69	2·89
Portsmouth and Concord,*	18	2·77
Sullivan,	25	3·00
Wilton,	18	
Cheshire,	43	
Eastern,	16	
Nashau and Lowell,	5 1-2	
Nashua and Worcester,	7	
Great Falls branch,	3	
	405 1-2	

VERMONT.

Connecticut and Passumpsic river,	40	3·10
Rutland and Burlington,	120	3·00
Vermont Central,	117	2·90
Connecticut River,	10	
	287	

MASSACHUSETTS.

Berkshire,	21	
Boston and Lowell,†	26	2·50
Woburn branch,	2	
Boston and Maine, (74 in all)	36	2.53
Medford branch,	2	
Lawrence branch,	3 1-2	
Boston and Providence, (43 in all)	37 1-2	2·90
Branches,	12	
Stoughton branch,	4	
Boston and Worcester,	45	2·55
Brookline branch,	1 1-2	
Milford branch,	13	2·50
Newton branch,	1 1-4	
Saxonville branch,	4	2·40
Millbury branch,	4	3.75
Cape Cod branch,	27	3·21
Cheshire, (54 in all)	11	3·05
Connecticut River,	50	3·00
Chicopee Falls branch,	2 1-2	
Dorchester and Milton,	3	
Eastern, Boston to Portsmouth, (54 in all)	38 1-4	2·77
Marblehead branch,	3	
Gloucester branch,	13 1-2	3·00
Salisbury branch,	3 1-2	3·00
Essex, (Salem to Lawrence,)	20	2·85
Fall River,	42	2·50
Fitchburgh,*	51	2·60
Watertown branch,	5	
Other branches,	3 1-2	

Fitchburg and Worcester, (26 in all) -	14	2·88
Lexington and West Cambridge, - -	6 1-2	3·75
Lowell and Lawrence, - - -	13	2·69
Nashua and Lowell, (15 in all) - -	9 1-2	2·66
New Bedford and Taunton, - -	31	2·90
Branch, - - - -	1	
Newburyport and Georgetown, - -	8	
Norfolk County, (36 in all) - -	26	2·85
Norwich and Worcester, (66 in all,) -	17	2·00
Old Colony, (Boston to Plymouth) -	37 1-4	3·02
Bridgewater branch, - - -	8	3·57
Peterboro' and Shirley, - - -	12	2·50
Pittsfield and North Adams, - -	20	3·00
Providence and Worcester, (43 1-2 in all)	26 1-2	3·02
Quincy, - - - - -	3	
South Shore, - - - -	11 1-2	2·91
Stockbridge and Pittsfield, - -	25	3.00
Stony Brook, - - - -	17	2.35
Western, Boston to Albany, (200 in all) -	117	2·50
West Stockbridge, - - -	2 3-4	
Worcester and Nashua, (45 1-2 in all) -	38	2·77
Springfield and Hartford, (62 in all) -	5	
Vermont and Massachusetts, - -	59	2·53
	993 1-2	
CONNECTICUT.		
Canal railroad,* - - - -	45	3·12
Collinsville branch, - - -	8	3·00
Hartford, Providence and Fishkill,* -	45	2·00
Housatonic, - - - -	74	2·70
Naugatuck, - - - -	62	2·63
New Haven, Hartford and Springfield, -	57	2·82
Middletown branch, - - -	10	3.00
N. London, Willimantic and Pal., -	48	2.60
New York and New Haven, - -	47	1.98
Stonington, - - - -	5 1-2	3.00
Norwich and Worcester, - - -	49	
	450 1-2	
RHODE ISLAND.		
Providence and Worcester, - -	17	
Stonington, - - - -	44 1-4	
	61 1-2	
NEW YORK.		
Albany and Schenectady, - - -	17	2·94
Albany and West Stockbridge, - -	38 1-4	2·50
Attica and Buffalo, - - -	31 1-2	2·90
Auburn and Rochester, - - -	78	3·20

Auburn and Syracuse, - - -	26	3·07
Buffalo and Niagara Falls, - -	22	3·40
Buffalo and Black Rock, - - -	3	
Cayuga and Susquehanna, - -	28	3·00
Chemung, - - - -	17 1-2	2·33
Hudson and Berkshire, - - -	31 1-2	3·03
Hudson River,* - - - -	75	1·33
Lewiston, - - - - -	3 1-2	
Lockport and Niagara Falls, - -	24	4·12
Long Island, (Brooklyn to Green't) -	98	2·10
New York and Erie,* - - -	294	
N. Y. to Piermont, *S. B. route*, (25 miles,)		2·04
Newburch Branch, - - -	10	2·36
New York and Harlem,* - - -	80	2·06
Northern,* (Rouse's Point to Chateaugay,)	41	
Oswego and Syracuse, - - -	35	2·85
Rensselaer and Saratoga, - - -	25	3·00
Saratoga and Washington, - -	39 1-2	3·75
Schenectady and Saratoga, - -	22	3·40
Schenectady and Utica,† - - -	78	2·84
Skaneateles, - - - -	5	
Tonawanda, (Batavia to Attica,) - -	43 1-2	3·03
Troy and Greenbush, - - -	6	2·50
Troy and Schenectady, - - -	20 1-2	2·50
Tioga Coal and Iron Railroad, - -	15	
New York and New Haven, (76 in all) -	15	
Syracuse and Utica, - - -	53	
	1285 3-4	

NEW JERSEY.

Burlington and Mt. Holly, - -	6	4·09
Camden and Amboy, - - -	62	
Amboy to N. York, *S. B. Route*, (28 miles)		3·33
Trenton branch, - - -	6	
Morris and Essex, - - -	36	2·77
New Brunswick and Trenton, - -	29	
New Jersey, - - - - -	31	1·61
New Jersey Central, - - -	36	
Patterson and Hudson, - - -	17	3·00
Ramapo and Paterson, - - -	16	3·30
	239	

PENNSYLVANIA.

Alleghany and Portage, - - -	36	
Beaver Meadow, - - - -	26	
Carbondale and Honesdale, - -	16	
Columbia and Philadelphia, -	82	2·88
Westchester Branch, - - -	9	2·77
Corning and Blossburg, - - -	25	3·75

Cumberland Valley, - - -	56	3·78
Hazleton and Lehigh, - - -	10	
Little Schuylkill, - - - -	20	3·75
Mine Hill, - - - - -	12	4·00
Mount Carbon, - - - -	7	
Pennsylvania,* 134, - - -	97	3·50
Philadelphia, Reading and Pottsville,† -	92	3·80
Philadelphia and Norristown, - -	17	2·35
Germantown Branch, - - -	6	2·50
Philadelphia and Trenton, - - -	30	2·50
Philadelphia, Wil. and Balt., - -	98	3·06
Schuylkill Valley, - - - -	14	
Summit Hill and Mauch Chunck, - -	9	2·77
Whitehaven and Wilkesbarre, - -	20	
Williamsport and Elmira, - - -	25	5·00
Franklin, - - - - -	22	
Philadelphia and Westchester, - -	11	
	740	
DELAWARE.		
New Castle and Frenchtown, - -	16	4·68
MARYLAND.		
Annapolis and Elkridge, - - -	21	4·28
Baltimore and Ohio,* - - -	179	3·91
Washington Branch, - - -	31	4.50
Frederick Branch - - -	3	
Baltimore and Susquehanna - -	71	3·00
Westminster Branch - - -	10	
	315	
VIRGINIA.		
Appomattox - - - - -	10	5·00
Central Virginia - - -	71	5·15
Chesterfield - - - - - -	12	
Greenville and Roanoke - - -	21	2·38
Petersburg - - - -	63	2·38
Richmond Fred. and Potomac - -	76	——
Richmond and Petersburg - -	22	4·54
Winchester and Potomac - -	32	6·25
	307	
NORTH CAROLINA.		
Gaston and Raleigh - - -	87	4·59
Wilmington and Weldon - - -	162	2·50
	249	
SOUTH CAROLINA.		
Columbia and Greenville, - - -	22	
South Carolina, - - - -	136	3·67

Columbia Branch, - - -	68	4·00
Camden Branch, - - -	38	4·00
	262	
GEORGIA.		
Central Georgia, - - - -	191	3·00
Georgia, - - - - -	171	2·92
Macon and Western, - - -	101	3·96
Western and Atlantic, - - -	104	3·00
Athens branch, - - -	39	
Rome branch, - - -	18	
	660	
ALABAMA.		
Montgomery and West Point, - -	68	5·14
Tuscumbia and Decatur, - - -	44	
	112	
MISSISSIPPI.		
Vicksburg and Jackson, - - -	60	4·58
LOUISIANA.		
Clinton and Port Hudson, - - -	24	4·16
Mexican Gulf, - - - -	27	1·85
Milneburg and Lake Ponchartrain, - -	6	2·00
New Orleans and Carrolton, - -	6	2·50
West Feliciana, - - - -	26	5·76
	89	
KENTUCKY.		
Lexington and Ohio,* - - -	28	3·57
Louisville and Frankfort,* - -	27	
	55	
ILLINOIS.		
Galena and Chicago,* - - -	42	2·97
Sangamon and Morgan, - - -	55	4·00
	97	
INDIANA.		
Madison and Indianapolis, - -	86	2·90
Shelbyville Branch, - - -	16	3·01
	102	
OHIO.		
Cleveland and Columbus,* - -	26	
Dayton and Springfield, - - -	25	
Little Miami, - - - -	84	2·97
Mad River and Erie, - - -	134	3·35
Mansfield and Sandusky, - - -	56	2·67
Xenia and Columbus, - - -	54	3·03

Findlay Branch, - - -	20	
Erie and Kalamazoo, - - -	15	
	414	
MICHIGAN.		
Detroit and Pontiac, - - -	25	4·00
Michigan Central, - - - -	218	2·98
Tecumseh branch, - - -	8	
Michigan Southern, - - -	66	
	317	

* Railroads unfinished, July, 1850.
† Double Track.

RECAPITULATION.

	Miles.
Maine, - - -	225
New Hampshire, - - -	405 1-2
Vermont, - - - -	287
Massachusetts, - - -	993 1-2
Rhode Island, - - -	61 1-2
Connecticut, - - -	450 1-2
	2423
New York, - - - -	1285 3-4
New Jersey, - - -	239
Pennsylvania, - - -	740
Delaware, - - - -	16
Maryland, - - - -	315
Virginia, - - - -	307
North Carolina, - - -	249
South Carolina, - - -	262
Georgia, - - - -	660
Alabama, - - - -	112
Mississippi, - - -	60
Louisiana, - - - -	89
Kentucky, - - - -	55
Illinois, - - - -	97
Indiana, - - - -	102
Ohio, - - - -	414
Michigan, - - - -	317
	5319
	2423
Total, - - - -	7742

Adding to the above the various coal roads in the country, would give an aggregate of about 8,000 miles.

The whole amount expended upon roads in operation cannot be far from $300,000,000.

New York takes the lead in the extent of her roads, and will probably maintain her position as the first Railroad State in the Union, for an indefinite period. Ohio will soon follow as the second, Pennsylvania the third, and Georgia the fourth. Massachusetts must soon lose her relative position from the smallness of her territory. Connecticut bids fair to have the most in proportion to her area and population.

It is difficult to ascertain the extent of railroads in progress. It cannot, we think, be less than 500 miles. Every year increases the number of the projects; and unless the demand which they make upon capital of the country should have the effect to cripple their operations, it is difficult to estimate the extent to which these works will be carried in the next ten years.

From the American Railroad Journal.

DOCUMENTS RELATING TO THE MANUFACTURE OF IRON IN PENNSYLVANIA.

PUBLISHED ON BEHALF OF THE CONVENTION OF IRON MASTERS, WHICH MET IN PHILADELPHIA ON THE 20TH OF DECEMBER, 1849.

Having thus briefly adverted to the general views which have guided the convention, our remaining space will be given to a few of the most remarkable statements of the documents. The most impressive to a Pennsylvanian is the rapid growth of the manufacture of iron in this country; which is asserted to have reached, at the commencement of the existing depression, an amount, "equal to that of England fifteen years ago, (800,000 tons in 1834). It is a source of just pride, as well as of hope, that contending against the immense resources of the British works, the steadiness of their running, and their accumulation of skill and confidence under a long continued patronage of the government, our manufacturers have been able to reach so advanced a stage, and that with so powerful adversaries, and in the midst of unexampled misfortunes, they ask no aid except against artificial irregularities, produced by special foreign efforts against them, or by fluctuations in the British supply not resulting from the normal course of trade.

From the purpose of contrasting the limited encouragement thus asked, with the protection under which the British works have attained their actual condition, the Committee on Statistics have compiled a summary of British legislation from the year 1679 to 1826; during which long period of *one hundred*

and forty-seven years, we find "an unwavering protection, always under specific duties, and always increasing in amount until they were no longer needed." Accompanying these duties in the summary, we find, in addition to the prohibitory character of some of the imposts, a series of grave penalties upon the exportation of workmen and tools; and a list of brilliant inventions carefully guarded in their application, and restricted in their first and most encouraging effect to British works.

Accompanying the report of the same committee are fifteen elaborate tables, the great value of which will be at once recognised. They were prepared by the able chairmain of the committee,* during a visit and inspection by him of all the works in Pennsylvania. They exhibit the number and condition of each kind of iron works in the year 1850, distinguishing anthracite, raw bituminous, coke, and charcoal furnaces. bloomeries and forges in general, and rolling mills, showing respectively the date of construction—name of the works—the post office—names of owners and lessees; the number in and out of blast—the number sold by the Sheriff or failed since 1840—the amount of investment in each—the largest product—the actual make in 1849—the annual capacity—the number of men, boys, oxen, horses and mules employed—the dimensions of stack—number and dimensions of tweres—heat and pressure of blast—kind of power used—kind of metal made—form in which the iron leaves the works and the market for sales; for the bloomeries and rolling mills we have further the number of blooming fires and hammers—number of puddling and heating furnaces—trains of rolls and nail machines, and the quantity and kind of materials used, etc., etc. These details are separately arranged with reference to Eastern and Western Pennsylvania; a distinct place in the tables being given to the particulars of each of the works in each of the 45 counties in which there are manufactories of iron.

Of the remaining seventeen counties, nine "contain abundance of iron ore and coal, but owing to the absence of any cheap road to market, they yet remain untouched, leaving only eight counties of sixty-two in the State, not suited to the manufacture of iron."

The number of furnaces of each kind, and of bloomeries, is stated at 304; the present capacity of which is 550,959 tons. The investment $12,921,576.

The number of forges is 121, with a capacity of 50,250 tons, and an investment of $2,026,300.

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* Mr. Chas. E. Smithh, whose well known practical skill, aided by personal inspection of the works of Great Britain and continental Europe, as well as of those in the United States, had peculiarly qualified him for this duty.

The number of rolling mills 79, with a capacity of 174,400 tons, and an investment of $5,554,200.

The present annual capacity of the State for rails is given at 64,400 tons.

The number of works for the conversion of iron into steel is 13; the amount annually converted being reported at 6,078 tons.

The total number of nail machines is 606, averaging 30,300 tons a year.

The aggregate value of these works must astonish those of our fellow citizens, whose attention had not been given to the importance of the iron manufacture to our State.

Total number of works of all kinds, - -	504
Capital invested in lands, buildings and machinery, - - - - -	$20,502,076
Number of men employed, - - -	30,103
" horses " - - - -	13,562

It is to be noticed that under the head of capital, are included only such lands and buildings as belong to the iron master, and are directly dependant on the iron works for their value. It does not include farms, grist and saw mills, horses, wagons, nor tools, nor the dwellings of workmen in large cities; nor coal land, nor the capital and men employed in running and transporting coal to the works, nor in transporting the finished iron to market; nor the value of ore banks not belonging to the iron master, nor the working of such banks. Hence, vast as is the amount stated, much remains to be added before we can form an adequate conception of the extent of property and labor involved in the manufacture. Take for example the single item of fuel:

Anthracite coal, 483,000 tons—average value $3,	$1,449,000
Bituminous coal, 9,007,600 bushels at 5 cents,	450,380
Wood, 1,490,252 cords at $2 (in coal)	2,980,504
	$4,879,884

making nearly five millions of dollars annually, as estimated from the consumption of 1847.

It cannot be otherwise than interesting to trace the relation of so extensive a department of industry to the agricultural and other productive classes of our people. Forming, as this does, an important part of the history of our social progress, it claims the attention of the inquirer, irrespectively of its bearing upon the revenue system, and it is only with reference to its most general aspects that we advert to it here. Whatever may be thought of the particular estimates of the "documents," no reader can fail to perceive that the contributions of the iron manufacture to the encouragement of agriculture have been greatly undervalued in the popular mind. It is not

difficult to obtain a closely approximate average of the consumption of persons engaged in that manufacture, and of the number of such persons. Mr. Smith, whose personal inquiries at each of the works give to his calculations the value of direct competent testimony, calculates that there are about 41,600 men directly dependant upon the iron works of the State; that is, about 11,500 in addition to the 30,000 who are in the actual pay of the iron masters. If we concede to him his allowance of five persons to each laborer, we have more than 200,000 persons, or about one-tenth of the entire population of the State dependent upon the manufacturer of iron, but even after any reduction which can be reasonably made from this allowance, the number of mouths to be fed must bear a large proportion to that of the whole people of Pennsylvania.

In a communication from Mr. Samuel J. Reeves, a gentleman at the head of one of the largest establishments in the country, it is stated that the number of people supported by the iron business in the whole country is about 600,000; and to these he allows a consumption of land products to the amount of $50 per head per annum, equal to a total of 30 millions of dollars annually. We can fully appreciate the greatness of this result, when we have compared it with the amount of our exports. By the Register's tables for the last fiscal year reported [ending June 30th, 1849] it appears that the total value of export to England, Scotland and Ireland, of flour, Indian corn and Indian meal, was only $12,848,308, and that the total vegetable food for the United States to *all parts of the world* was only $25,642,362. The exports of all products whatever directly from agriculture, [exclusive of tobacco, cotton and sugar] including pork, beef etc., to every part of the world, amounted to only $38,824,787.

We have not space to continue this view of the subject. The reader will easily recall other topics, such as the enlargement of domestic traffic; the increase value given to property, the augmentation of state revenues from taxes, and of tolls, upon internal improvements. It is aside from our purpose to consider the effect upon our currency and exchanges produced by importations from abroad, especially from countries to which our agriculture cannot contribute all the means of payment, and to which we must transfer specie, or government or corporative securities. This and other connected topics may be better discussed in their relations to the tariff policy of the country. It ought not, however, to be omitted, that the limitation put upon our exports of breadstuffs to Great Britain is much below the demand which the iron used by us makes upon agriculture. Many articles for which the former seeks a market, do not admit of exportation; but they meet with a constant consumption among iron workers at home; and the kind of demand thus oc-

casioned is so far independent of the principal articles exported, as to interfere little, if at all, with the probable further shipments of breadstuffs.

A more restricted, yet very effective mode of exhibiting the dependence of the farming classes, is used by Mr. Reeves, who adds an estimate for some other interests. Taking about fifteen millions of dollars as the value of imports of iron from Great Britain for the last reported fiscal year, it is estimated that there were consumed in the manufacture in Great Britain—

Coal, 1,412,649 tons—Iron ore, 1,053,739 tons—Limestone, 411,706.

The labor, at the rate adopted for the calculation, would amount to about eleven millions of dollars. The number of workmen is put at 56,471; and if these are allowed only $30 each per annum, the total of farmer's products imported in the form of iron for the last fiscal year is estimated at more than eight millions of dollars; if rated at the American allowance, the value thus calculated would amount to more than fourteen million of dollars.—It will be observed that the value of the coal, ore, and limestone may be considered as created by their use in this manufacture; without which they must have remained unconsumed for an inadequate time.

Mr. Smith reports that of the 298 furnaces in Pennsylvania, 149 or exactly one-half are in blast this year,* and that of this number about one-third are making no preparations to blow during the next year; that in Eastern Pennsylvania, the manufacture of all descriptions of iron which came in competition with the English, is extinct; that a small amount of railroad iron is still made for the interior (as must be the case even for a time after it has ceased to repay cost;) but that this branch shows a decline of 54 per cent in two years; and that of the six rail mills in the State, two are stopped entirely—and the remaining four are not averaging half time; that during the first four months of this year fifteen furnaces were sold by the Sheriff, and other sales under execution were expected; and that, judging by the present state of affairs the make of 1850 will not exceed 100,000 tons.

It is melancholy to witness this decline of so vast a system of industry, holding relations so important with the leading interest of the country. Whether this is to be attributed to causes within the control of the parties primarily concerned in the establishment of that system, or to others properly within the sphere of legislation, must be determined by each individual, according to his economical views. We had designed to abtract some statements of the cost of manufacturing pig and bar iron iu the United States and in Great Britain, but we have already exceeded our intended limits of space. P.

* From this number must now be taken five furnaces which have recently blown out.

DECLINE IN COST OF MANUFACTURING.

Although we read daily accounts of the improvements that are being made in machinery, yet, no one can fully appreciate the results of these improvements without comparing the cost of producing a given article at different periods.

Perhaps a majority of the people throughout the country would have given it as their opinion, ten years ago, that the cost of producing cotton and woollen clothes had reached the lowest point; and few, we apprehend, could have believed it practicable that the cost of production could ever have been reduced to the present point.

We have selected the following tables from the report of the Secretary of the Treasury, by which it will appear that the articles therein described were sold in the year 1849 at about one-half of the price which similar goods brought in the year 1839, and a depreciation to about the same extent has taken place in almost every important branch of manufactures in this country. Can the cost of production be carried still lower? One would suppose taht such a result was scarcely practicable, and yet, we cannot believe the point of perfection has been attained in any one branch of the arts. It is a beautiful provision in social economy, that all discoveries and improvements inure to the benefit of the social weal, and enlarge the means of human comfort. EDRITOS.

Prices of Broadcloths manufactured by the Hamilton Woollen Company; Sayles, Merriam & Brewer, Agents. Boston, November 4, 1849.

year.	1st quality	2d quality	3d quality	4th quality	5th quality	6th quality
1830	———	$3 50	$3 00	$2 75	$2 25	$2 25
1831	$4 12 1-2	3 62	3 50	3 00	2 65	2 50
1832	4 50	4 00	3 50	3 12	2 62	2 50
1833	4 62	3 87	3 50	3 00	2 65	2 25
1834	4 50	4 25	3 62	3 25	2 75	2 25
1835	4 25	3 12	3 75	3 50	3 12	2 50
1836	4 50	4 25	4 00	3 50	3 25	3 00
1837	4 25	4 00	3 73	3 50	3 25	2 75
1838	4 00	3 75	3 50	3 00	2 75	2 50
1839	4 25	4 00	3 75	3 50	3 00	2 75
1840	4 00	3 50	3 25	3 00	2 50	2 12 1-2
1841	4 00	3 62 1-2	3 12 1-2	2 75	2 50	2 25
1842	3 25	3 00	2 62 1-2	2 50	2 25	1 87 1-2
1843	3 00	2 75	2 62 1-2	2 25	2 12 1-2	1 87 1-2
1844	3 50	3 00	2 87 1-2	2 35	2 25	2 00
1845	3 50	2 87 1-2	2 75	2 37 1-2	2 12 1-2	2 00
1846	3 50	2 87 1-2	2 62 1-2	2 32	2 00	1 70
1847	3 00	2 50	2 37 1-2	2 12 1-2	2 00	1 62 1-2
1848	2 12 1-2	1 90	1 87 1-2	1 62 1-2	1 56 1-4	1 40
1849	2 00	1 87 1-2	1 75	1 60	1 45	1 37 1-2

The different qualities were all very uniform during the above period of twenty years.

Memorandum of prices of Northampton W. M. Co.'s goods for thirteen years; furnished by Dr. Edward H. Robbins, of Boston. November, 1849.

In 1837	good sold for	- - -	$3 37 1-2	per yard.
1838	do	- - -	3 75	do
1839	do	- - -	3 50	do
1840	do	$2 87 1-2	a 3 00	do
1841	do		3 12	do
1842	do		2 75	do
1843	do	2 87 1-2	a 3 00	do
1844	do	3 00	a 3 12 1-2	do
1845	do	3 00	a 3 12 1-2	do
1846	do		3 00	do
1847	do	2 87 1-2	a 3 00	do
1848	do	2 10	a 2 37 1-2	do
1849	do	1 87 1-2	a 2 00	do

Prices of Middlesex wool black cassimeres, of the same quality, for the following years; furnished by Lawrence, Stone & Co. Boston, November. 1849.

1836	Wool black,	$1 87 1-2	to $2 00	9 ounces per yard.
1837	do		1 87 1-2	do
1838	do		1 87 1-2	do
1839	do		1 70	do
1840	do		1 80	do
1841	do		1 70	do
1842	do		1 50	do
1843	do		1 50	do
1844	do		1 40	do
1845	do		1 35	do
1846	do		1 30	do
1847	do	1 25	to 1 30	do
1848	do		90	do
1849	do		1 00	do

BANKING IN THE UNITED STATES.

The Washington correspondent of the Evening Post furnishes that paper with a digest of a report on the condition of the banks in the Union made to Congress. The following are the leading items of that report:

Comparative view of the condition of the Banks of the United States—January,

	1848.	1849.	1850.
Number of banks and branches, - -	751	782	829
Capital paid in	$204,833,175	$207,309,361	$217,317,211

Resources.

Loans and discounts,	344,476,582	332,333,195	464,204,078
Stocks, - -	26,498,054	23,571,575	20,006,759
Real Estate, -	20,580,955	17.491,809	20,532,066
Other investments,	8,229,682	7,965,463	11,949,548
Due by other banks,	38,904,525	33,258,407	41,631,855
Notes of other banks,	16,427,716	12,708,016	16,303,239
Specie funds, -	10,409,822	8,680,483	11,003,245
Specie, - -	46,369,765	43,619,308	45.379,345

Liabilities.

Circulation, -	128,506,091	114,742,415	131,306.526
Deposits, - -	103,226,177	91,178,623	100,536,595
Due other banks,	39,414,371	30,005,366	36,717,451
Other liabilities,	5,501,401	6,706,657	8,835,359
Total of cur. credits, i. e. circulation and deposits, - -	231,732,268	205,922,038	210,953,121
Total of immediate liabilities, i. e. circulations, deposits & sums due other banks,	271,146,639	236,017,404	277,670,572
Total of immediate m'ns, i. e, specie funds. Notes of other banks and sums due by other banks, -	112,191,828	98,236,274	114,917,778
Excess of immediate liabilities above immediate means, -	158,954,811	137,781,130	182,752,794

Specie in the Banks. Circulation and Deposits.

	Specie.	Circulation.
1834		94,839,570
1835	43,937,626	100.662,405
1836	40,019,594	140,301,038
1837	37,915,340	140,135,190
1838	35,184,112	116,138,910
1839	45,132,673	135,170,995
1840	33,165,155	106,986,572
1841	34,818,913	107,290,214
1842	28,440,313	83,734,011
1843	33,515,806	58,563,603
1844	49,898,269	75,167,646
1845	44,241,242	89,608,711
1846	42,012,095	105,552,427
1847	35,132,516	105,519,766
1848	46,369,765	128,596,091
1849	43,639,363	114,743,415
1850	45,379,345	131,366,526

	Deposits.	Total of current credits.
1834	75,666,986	170,503,556
1835	83,034,365	131,773,860
1836	115,104,420	276,495,478
1837	127,397,185	276,533,075
1838	84,691,184	200,830,694
1839	90,240,146	225,411,141
1840	75,696,657	182,665,439
1841	64,890,101	172,180,315
1842	62,493,870	146,142,881
1843	56,168,623	114,732,231
1844	84,550,785	159,718,431
1845	83,020,646	177,629,357
1846	97,918,070	202,465,497
1847	91,782,533	197,312,299
1848	108,226,177	281,732,763
1849	91,178,623	265,922,033
1850	109,586,595	240,953,121

In May, 1837, the banks suspended specie payments. In May, 1838, the New York banks resumed specie payments, and the other banks attempted to follow their example, so that by January, 1839, there was what was called a general resumption of specie payments, though in many parts of the Union this was merely nominal.

In October, 1839, the banks of Philadelphia again suspended specie payments, and were imitated by the banks of the south and west.

Specie payments were not fairly resumed by the banks of Philadelphia till March, 1842. The banks of the south and west imitated their example; but in September, 1842, there was a tremendous bank convulsion at New Orleans, the effects of which were felt throughout the country. The consequence was, that by the 1st of June, 1843, the current credits of the banks were reduced to a very small amount. They continued small till May, 1843, when an expansion began, which was at first very gradual.

The great increase in the amount of specie and bank credits in 1848 over 1847, was in consequence of the demand for our breadstuffs in Europe.

In January last, the circulation of the banks was greater than it had been in any previous years, excepting 1834, 1837 and 1839; and the year 1839 may be left out of the comparsion, as in the returns for that year are included many banks which did not pay specie.

In January, 1850, the banks were more expanded than they were in January, 1848.

The small amount in which the specie in the vaults of the banks varies, when compared with the amount of their circulation and deposits, is not unworthy of observation.

The greatest amount of specie in the banks was in 1844, when it was $49,898,269. The smallest was in 1842, when it was $28,440,423. Difference, $21,457,846.

The circulation was lowest in 1843, when it was $58,563,-608; and highest in 1837, when it was $149,158,190. Difference, $90,621,582.

The deposits were lowest in 1843, when they were $56,168,-623; and highest in 1837, when they were $127,397,185. Difference, $71,228,562

The current credits were greatest in 1837, when they were $276,583,075; smallest in 1843, when they were $114,732,231. Difference, $161,850,844.

COMMERCIAL STATISTICS.

[From the Merchants' Magazine.]

EXPORTS OF PROVISIONS FROM THE UNITED STATES FROM 1840 TO 1849, INCLUSIVE.

	Beef. *Bbls.*	Butter. *Lbs.*	Cheese. *Lbs.*	Pork. *Bbls.*	Ham. *Lbs*	Lard. *Bbls.*
1840	19,631	1,177,639	723,217	66 281	1,643,897	7,418,847
1841	56.537	3,785 983	1,748.471	133 290	2 796 517	10.597,654
1842	48,581	2.055 133	2,456.607	180,032	2.518,841	20,102,397
1843	37,812	3,408.144	3,440,144	80,310	2 632,067	24,534,217
1844	106,174	3,251,952	7,343,145	161,629	3,886 976	25,746,355
1845	101,538	3.587,489	7.941,187	161 609	2,719 360	20,060,993
1846	149,223	3 436,660	8,675,390	190,422	3 006,630	21,843,164
1847	111,979	4 214,433	15,637,600	206,190	17,921,471	37,611,161
1848	103 719	2,751,086	12,913 305	218,269	33,551,034	49 629,539
1849	103,286	3,406,242	17,433,682	253,486	56,060,822	37,446,761

PRODUCT AND CONSUMPTION OF SUGAR THROUGHOUT THE WORLD.

FREEMAN HUNT, ESQ., *New York.*

TRINIDAD DE CUBA, *April 25th*, 1850.

SIR:—I take the liberty of enclosing a statement of the product and consumption of sugar throughout the world. By publishing this it may lead to further investigation of the same subject, although this is believed to be a correct summary.

And I would take this opportunity of expressing to you with how much satisfaction your Magazine is perused by me, as it is certainly the best work of the kind published.

Respectfully your obedient servants,

EATON, SAFFORD & CO.

PRODUCT OF SUGAR.

Spanish possessions, - - - -	lbs. 671,866,800
English possessions, - - - -	800,240,142
French possessions, including beet sugar,	137,333,350
Holland possessions, - - - -	120,000,000
United States, - - - - -	200,000.000
Brazil, - - - - - - -	260,000,000
Danish and Swedish possessions, - -	20,000,000
German and Belgian possessions, inc. beet sugar,	30,000,000
Mexico, Guatamala and Colombia, Venezuela, Peru, Egypt and China, - -	182,300,538
Total pounds produced, - -	2,421,740,830

CONSUMPTION OF SUGAR.

	Population.	Lbs to each person.	Pounds.
Spain and its possessions,	17,830,172	12	213,962,064
England, Scotland and Ireland,	28,944,843	21	607,841,703
English possessions in America, including the Antillas,	2,371,763	12	28,461,156
Germany, - - - -	38,715,600	5	193,578,000
Holland and its possessions,	7,294,318	15	109,414,770
France and its possessions,	36,000,000	8	288,000,000
Belgium, - - -	4,242,600	9	38,183,400
United States, - -	20,000,000	18	360,000,000
Mexico and Guatamala,	9,000,000	6	54,000,000
Brazil, - - - -	5,000,000	16	80,000,000
The rest of South America,	9,273,640	6	55,641,840
Portugal and its possessions,	5,162,000	4	20,648,000
Italy, - - - -	22,577,459	2	45,154,918
Switzerland, - -	2,188,009	2	4,376,018
Denmark and possessions,	2,232,965	6	13,397,790
Sweden and Norway, -	4,304,599	3	12,913,797
Russia, - - -	62,500,000	1½	93,750,000
Turkey and Egypt, -	20,000,000	1	20,000,000
China, - - -	227,000,000	3/16	42,562,500
The rest of the world, -	44,166,976	1/32	1,380,218
Population of the world of those who consume sugar, - -	707,279,600		2,421,740,830

From the Massachusetts State Record.

FOREIGN COMMERCE OF BOSTON.

The number of foreign arrivals at this port during December was 132; same month last year, 131. The following table shows the number of foreign arrivals, together with the amount of duties paid on foreign merchandise, for the last ten years.

Year.	Arrivals.	Duties on Foreign Merchandise.
1840	1628	$2,456,926.22
1841	1799	3,226,441.47
1842	1738	2,780,186.04
1843	1716	3,491,019.92
1844	2174	5,934,945.14
1845	2305	5,259,634.00
1846	2090	4,872,570.16
1847	2739	5,448,361.83
1848	3009	4,908,827.22
1849	3111	5,031,994.62
Total duties for 10 years,		$43,410,906.62

The following letter will show that the observations of the Superintendant of the National Observatory is likely to achieve as much for our commerce by the discovery of shorter sailing routes to different parts of the globe as we have gained by the application of steam to sea going vessels. The author is entitled to the gratitude of the nation for his valuable labors relating to ocean navigation.

WINDS AND CURRENTS OF THE OCEAN.

Copy of a letter addressed by the Superintendant of the National Observatory to the Secretary of the Navy.

NATIONAL OBSERVATORY, May 13, 1850.

SIR: — The investigations carried on at this office with regard to the winds and currents of the ocean, have led me to the discovery of a new route hence to the equator, by which the passage of all vessels trading under canvass, whether to South America, China, India or Australia; to California, Polynesis, or the markets of the Pacific, has been shortened several days.

This discovery has been duly made known to navigators, many of whom have availed themselves of it.

In order to enable the Department to judge of the importance of this discovery, and to compare the passages by the new route with passages made by the old, I submit herewith

a tabular statement, showing the passage of eighty-eight vessels by the new, and of seventy-three by the old or usual route.

These passages were taken at random from those that have been returned to the office, and are believed to afford a fair average.

The average passage by the old route to the equator is forty-one days.

You will observe by the tabular statement that the passage by the new route has frequently been made in about half that time, and even in less, as by the "St. Helena," the "Howqua," and the "Memnon," which three ships made the passage from New York in March and April, 1849, in nineteen, twenty, and nineteen days, respectively, by this route.

You will observe also that the vessels which have taken it in February and March have had, on the average, a passage of fourteen or fifteen days less than those which have taken the old route at the same season, and that, consequently, during the period of each year the markets of Brazil, China, and the Indies, and of all those countries beyond the equator, have been practically brought by these investigations, charts, and discoveries, two weeks nearer to our own doors than they were before.

The route by sea to all these places is the same until you cross the equator, and these charts have shortened that part of the route during these two months by more than one-third of the time hitherto required for its performance.

It will be further observed by this tabular statement, that the average passage to the equator during the half year which comprises the winter and spring months, has been shortened ten days by the new route, and by more than a week, on the average, the year round.

In view of these important and practical results, I beg leave to call the attention of the Departments to the fact that the vast amount of observations, data, and materials which it was necessary to collect and discuss, in order to arrive at such valuable conclusions, have been obtained without cost to the Government.

American ship-owners and masters, in the broad spirit of those enlarged and enlightened views for which they are celebrated, have, at my solicitation, not only furnished me gratuitously with abstracts and copies of old sea journals, from which the materials of the wind and current charts have been gathered, but they have agreed also to co-operate with me in the undertaking, and to make daily, and in all parts of the ocean, wherever an American ship may go, a series of observations for the completion and perfection of these charts.

More than a thousand private ships are now engaged daily in this important undertaking.

The only expense entailed by it upon the Government, so far, is the expense of making this information available after it has been obtained, by the publication thereof in a cheap and convenient form.

The charts that have been published hitherto relate principally to the North Atlantic ocean; but similar charts and investigations, with the view to like improvements in the navigation of the South Atlantic, the Pacific, and Indian oceans, are also in progress.

Many important subjects, such as the existence of rocks, shoals, and vigias; the true character and locality of dangers, of obstructions and facilities to navigation, with many other subjects of practical interest to commerce, and which relate to the winds and currents of the sea, require more careful and tedious investigation or examination than these private ships, which are aiding me, have the time to give.

In view of this fact, of what has already been accomplished and in consideration of the very great value of such service, I beg leave again to call your attention to the act of Congress which authorizes the employment of three small vessels of the navy to assist me with these investigations.

Hoping that the exigencies of the other branches of the public service are no longer such as to prevent suitable vessels from being detailed on this important work, I have the honor to be, respectfully, &c. M. F. MAURY.

HON. WM. BALLARD PRESTON,
Secretary of the Navy, Washington.

We have read with much interest the accounts given of the several trips that have been made, this season, up the Minnesota (St. Peters) river. And these accounts have had a general circulation in the public prints of the West, but as few people preserve their newspapers, we publish the following extract, from the "Minnesota Pioneer," with a view of preserving the facts for the historian:

"We have deemed the exploration of the Minnesota river, an object of primary importance on several accounts. As citizens of St. Paul, lying but five or six miles below the junction of the Minnesota and Mississippi rivers, the natural and inevitable point of transhipment from the larger steamboats running below, to the smaller boats of different construction, adapted to the navigation of the rivers above us, we wished to

know and the world should know, that the navigable waters above us, tributary to our trade, irrigate an extent of land as great and at least as fertile as the whole length of the Mississippi from St. Louis to St. Paul. All this has been demonstrated.

Again, it will be remembered that the whole of the west bank of the Mississippi river from the Iowa line to the northern boundary of Minnesota, is Indian territory; and that the whole country watered by the Minnesota, belongs to the Sioux Indians; that it is a portion of the continent hitherto almost unexplored and unknown—and that government has now appointed commissioners to treat for its purchase. A better knowledge of its situation, resources, and true value, seemed indispensable to enable the Commissioners and the Senate of the United States to estimate properly what might be a fair and just equivalent for the lands to be treated for.

"The first exploration was made three or four weeks since by the *Anthony Wayne*, which boat went up to the head of the Rapids, a distance of about 65 miles by the river, and then returned. Shortly after, the *Nominee* went up still higher, left her shingle upon the bank, and returned. The *Anthony Wayne*, on her return from below, was again chartered by our people, and reached a point within about 15 miles of the Blue Earth river, where she planted her shingle upon the shore, announcing herself as the first steamboat in those waters, and then returned. In the meantime, arrangements were made with the steamboat *Yankee*, Capt. Harris, to come prepared with fuel and provisions, to take a party as far as possible up the river. It is of this voyage of the steamboat *Yankee* far above the Blue Earth river, that we are now writing. The *Yankee* is a stern wheel boat, of light draught and powerful engines, about 145 feet long, and 200 tons burthen. She was provided with 200 bushels Rock Island coal, and had her hold full of dry wood; and was supplied with a great abundance and variety of provisions, and one ton of ice."

The "Pioneer" has published a full account of the trip, which we should be pleased to copy but for its great length.

All who have attempted to describe the valley of the Minnesota speak of it as the most beautiful and fertile region that they have ever beheld—and, if indeed it possesses the attractions attributed to it no part of the country East of the Rocky Mountains has ever settled so rapidly as will this when the Indian title shall have been extinguished.

LITERARY NOTICES.

MASONIC COLLEGE AT LEXINGTON, MO.

We have received the Second Annual Catalogue of the Officers and Students of this young and highly promising institution.

Faculty.—Rev. F. L. B. Shaver, A. M., President and Professor of Intellectual and Moral Science, and ex-officio president of Board of Curators. Archibald Patterson, A. M., Professor of Mathematics and Natural Science. William Cameron, A. M., Professor of Ancient Languages and Literature.

Number of Students in the several classes.—Juniors 10—Sophomoris, 7—Freshmen, 11—Irregulars, 6—Preparatory department, first division, 9—Second division, 60—Total, 103.

Sessions and vacations.—The Annual Commencement is on the fourth Thursday of July.

The College Year consists of two sessions: the first commencing the first Monday in October and ending the last Friday in February; the second commencing the first Monday in March and ending on Commencement day.

There will be a public Examination and Exhibition at the close of each session.

Students sent by Lodges, pursuant to a law of the Grand Lodge, admitted free of charge.

Tuition in the College proper, $15 per session; in the Preparatory Department, $10, *payable in advance.* Contingencies, (public fuel, servant's hire, &c.,) per session 1$. Board in respectable families from $1 50 to $2 25 per week.

Massachusetts State Record for 1850—By N. Capen, *Boston.*—This is the best arranged book of statistics that has come under our notice, and though treating mainly of the statistics of Massachusetts, will be found of great value to individuals of every part of the Union.

Free Masonry—Its history, and connection with, and analogy to religion, by Geo. W. Wharton, M. D., of Ala. This is the most chaste and learned discourse that we have met with on the subject of Free Masonry. We regret that it is too long for a place in our Journal.

THE

WESTERN JOURNAL.

M. TARVER and T. F. RISK, Editors and Proprietors.

VOL. IV. AUGUST, 1850. NO. V.

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TO OUR PATRONS.

We beg leave to call the attention of our subscribers whose accounts remain unsettled, to the importance, to us, of an early adjustment. Post masters are authorised to remit by mail, free of postage, and all sums due may be remitted at our risk.

EDITORS.

M. PAWLEY. H. B. HAWKINS

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HAVING made an important improvement in the application of Blake's Slate Paint, for which I am obtaining Letters Patent, I am prepared to do any amount of work, in the roofing line, or to furnish any person with the slate, in sheets or rolls, containing from 2 to 600 feet in a roll; and any person can lay it over his roof himself. Farmers and merchants can have their warehouses, barns and dwellings rendered perfectly fire proof by this means. I charge $5 50 per square of 100 feet. In building, nearly one fourth of the entire cost may be saved by having the roofs flat. The gable walls and steep roof being dispensed with if thought best; thus making the cost of a roof of my slate less than even shingles and one half less than Welsh slate, or iron. I can do work for persons out of the city if desirable, provided the distance is not too great from the rivers. Persons wishing to embark in the roofing business, can buy the right to any territory they wish, at low rates; and are sure to make money if they are industrious. I am prepared to fill all orders that may present for doors, sash, blinds, flooring, &c., at lower rates than any one in the west. No order will be filled without the cash. Any particular form of sash or doors made to order. Manufacturers, as usual, supplied with any kind of machinery. Patents secured. Engraving done.

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In his line, for gentlemen's wear; and where he will be pleased to see his old friends and customers, and their friends with them; and assures those who may favor him with their patronage, that they shall receive his personal attention, and his best efforts to please. Very respectfully, your ob't servant,

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☞All letters addressed to John Sigerson, St. Louis, or to James Sigerson, Carondolet, will meet with prompt attention.

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	Portrait of first horse.	Do. Second do.	Do. Third do.	Divi'ed am'gst the portraits of Starters.	Do. Do. non starters
First class	£20,000	£10,000	£5,000	£5,000	£10,000
Second do.	10,000	5,000	2,500	2,500	5,000
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PUBLISHED MONTHLY.

DEVOTED TO

AGRICULTURE, MANUFACTURES, MECHANIC ARTS, INTERNAL IMPROVEMENT, COMMERCE, AND GENERAL LITERATURE.

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VOL. IV. SEPTEMBER, 1850. NO. 6.

THE WESTERN JOURNAL,

OF

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THE

WESTERN JOURNAL.

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WESTERN JOURNAL.

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ART. I.—INTERNAL IMPROVEMENTS.

Anticipating that the Legislature of Missouri will, at its approaching session, be called on to decide how far it will pledge the State to the encouragement of works of Internal Improvement, and, conceiving that the measure has not been sufficiently discussed before the people, we propose to submit a few remarks in reference to this subject for the consideration of our readers. The embarrassments that have been experienced by some of the States as a consequence of their connections with works of Internal Improvement admonish others to exercise great caution; but such cases are not to be regarded as proof that a State, acting on facts peculiar to itself, and wisely adopting the policy indicated by such facts may not afford substantial aid to works of Internal Improvement, with safety and profit to the community.

It may be admitted that where individual capital and enterprize are adequate to the accomplishment of works of Internal Improvement, it is better that the State should avoid all connection with such works; but cases may occur where owing to peculiarities in the physical character of the country and the social condition of the people, important works cannot be accomplished without aid from the State; and in such cases three points are presented for consideration. First, is the work proposed calculated to promote the prosperity and general welfare of the community? second, in what manner shall the State afford assistance? and third, to what extent?

The State of Missouri possesses within her own limits the elements of a great empire; her mineral wealth may be regarded as inexhaustible, and her agricultural resources equal perhaps to those of any other State of the Union; but, for the want of facilities of transportation neither mining nor agriculture will pay a profit to the producer, except in a few favored

locations adjacent to navigation. And, hence, the Iron, Coal, and fertile soil of large districts lie undisturbed, and are as useless for all practical purposes as they would be were they at the bottom of the ocean. Nor can the products of these districts reach a market on terms that will enable the producers to compete successfully with more favored locations, without the construction of works of great magnitude; a short rail road would be of little utility in Missouri: and the individual capital that can be spared from the ordinary channels of business, is inadequate to the construction of lines of sufficient length to be useful to the community, or profitable to the stockholders. And, hence, it may be regarded as almost certain, that unless the State comes up to the aid of individual enterprise, no important work can be accomplished within its borders for many years to come; and it remains with the people to determine whether they will continue contented with their present condition until the neighboring States shall have become so densely inhabited as to compel a portion of their population to emigrate hither, and bring the means and enterprise to develop our resources, or, whether in view of their own individual and social interests—actuated by the progressive spirit of the age—they will without further delay, enter on a course of manly competition with their neighbors.

But should the Legislature incline to afford substantial aid to works of Internal Improvement, in what way, and, on what principle should the State proceed to accomplish the objects proposed? Not by undertaking the work wholly on its own account: for the history of all such enterprises shows that individuals can, and do manage such matters with better economy than can the State Governments through their agents. But if even this were not the case, yet, it is scarcely possible that the State can construct a work on its own account without doing injustice to a portion of its constituents. No improvement can be so located as to afford equal advantages to all. For besides the commercial advantages, the real estate situate near the line of improvement may advance to double its former value, and still the fortunate owner bears no greater proportion of the burthen of constructing the work than one who, by reason of his remote situation, receives scarcely any benefit in return for his portion of the contribution.

This inequality of benefits accruing from works of Internal Improvement is inevitable; and a case could scarcely be conceived where, in our opinion, a State Government could embark in an enterprise of this nature without doing injustice to a portion of its constituents. But the state may become a stockholder to an extent commensurate with the general benefits of the improvement, without violating the principles of equality: especially, if the work be extensive, and calculated

to constitute a basis of a general system. The policy, recently adopted by some of the States, authorizing counties to subscribe for rail road stock, is calculated to distribute both the burthens and advantages of constructing railways and other works of improvement more fairly among the people than any other principle yet discovered. For it frequently happens that individuals whose estates are situate near to lines of improvement, though possessing ample means, refuse to subscribe for stock, avoiding all the responsibilities and inconveniences connected with the enterprise, that they may be the better able to avail themselves of the benefits accruing from its accomplishment. And some of these will not scruple even to profit by the misfortunes and embarrassments of those who, actuated by a generous public spirit, improvidently undertake more than they can accomplish. Justice demands that such individuals should be compelled to contribute their fair proportion to the improvement of the country; and this end can only be attained by state or county subscriptions. To the credit of the age, and happily for society, the individuals of this class are generally in the minority; and it is therefore in the power of the majority to compel them to be useful, without violating the principles of justice.

We regard subscriptions for stock, on the part of the State, as being preferable to any other mode of encouraging works of Internal Improvement; but even subcriptions should, in our opinion, be limited to such works as are necessary to constitute the basis or outlines of a system. Let us first of all project a system, and then construct one or more of the main stems or trunks; and the branches will be made by individuals and counties wherever they find it to be their interest to do so. By adopting this policy, it will be in the power of the State to impart life to a system which, when once fairly under way, will be carried out by individual enterprise, while every branch that shall be added will tend to enhance the value of the stock belonging to the State.

The amount of stock which the State ought to take, will always depend upon so many circumstances that each case as it arrises must furnish its own rule; but, in our opinion, it would not be sound policy for the State, in any case, to subscribe for stock exceeding one-fourth of the amount required to construct the work; for if individuals and counties immediately interested will not bear three-fourths of the burthen, it would be unjust to place more than one-fourth on those whose condition can scarcely be effected by the improvement. And, besides this, the State should not become a subscriber for stock in any work until individuals had given evidence of their confidence in its utility, by making liberal subscriptions.

Scarcely any subject can be presented to the statesman or

political economist, that requires more reflection or a greater degree of caution, than that of perfecting a system of Internal Improvement, and establishing the principles upon which it shall be carried out. A radical error in the plan or in the mode of execution generally proves fatal; and is worse than doing nothing; for it stands in the way of a second effort. No error is more common than that of undertaking to do too much in a given time. This has occasioned as much embarrassment perhaps as all other cases combined. By withdrawing a large amount of capital and labor from their usual employment, derangement is produced in all the pursuits of the community; and while money is more difficult to obtain, labor, provisions, and materials advance in price, until a revulsion takes place and the work of improvement is suspended for a time, or perhaps abandoned entirely. One must possess a thorough knowledge of the commerce and general resources of the community, before he can arrive at just conclusions in respect to the amount that may be applied, in a given time, to works of Internal Improvement, without embarrassing other pursuits. Time is an essential element in all calculations relating to what man is capable of performing; limit his action to a day or a year and you limit his power: the crowning act of a great achievement may be performed perhaps in a moment; but in most cases that act is one of a series that have given employment to the time and talents of the individual for many years. No great work could be accomplished in Missouri in one, nor, perhaps, in ten years without the aid of foreign capital; but if we were to commence on a proper system and pursue it steadily, we might, in time, by the use of our own means, achieve all that can reasonably be desired. But are the people of Missouri willing to wait on this slow process, while they labor in competition with producers in other States, who enjoy greater facilities of transportation? We know that there is a respectable portion of our citizens who are prepared to oppose any and every proposition to connect the State, in any way whatever, with works of Internal Improvement; and our principal object in discussing the subject, is to ascertain, if possible, whether a majority of the State entertain similar views.

We believe that the subject has not been fairly discussed. The friends of the measure have not been sufficiently explicit in defining the nature and extent of their plans; and, the opposers assuming that their policy is calculated to involve the State in inextricable embarrassments, the argument between the parties has proceeded without an issue. In justice to themselves and their cause, those who claim assistance from the State, should show that their views are consistent with the principles of equality, and that they ask nothing that may not be granted with safety.

Should it be proposed to construct a railway from one end of the State to the other, all must admit that every part of the community would be benefited, to some extent, by the improvement: and therefore, it would be just that all should bear a portion of its cost. And, in such case, should those more immediately interested in the work subscribe for nine tenths of the stock, would it be unreasonable to require that the State should take the other tenth? She would be bound for nothing beyond the payment of her subscription and the debts of the company which her stock represented; and it would be reasonable to expect that after the improvement was completed the dividends would pay the interest on the amount invested.

This is a fair exposition of the principle which we advocate, and which, we believe, may be adopted with safety to the community.

It is not a sufficient answer to our views to say that, in every case where States have undertaken works of improvement on their own account it has been the cause of embarrassments, and, that the works themselves have been badly managed. We advocate no such policy; nor, should we approve of a proposition to loan the credit of the State to an incorporated company. We simply propose that the State should become a subscriber for stock, on the same terms that citizens or corporations subscribe, and that she subscribe for no more than may be deemed necessary to insure the accomplishment of the work.

We feel persuaded that there is nothing in our proposition that the most cautious individual can object to, with reason; and we cannot think otherwise than that, if this subject were fully and fairly discussed, it would receive the approbation of a majority of the people. For we are unwilling to believe that they are so wedded to old prejudices, so destitute of State pride, or, so regardless of individual interest, as to oppose a measure just in itself, and, withal, calculated to ameliorate their individual and social condition.

We respectfully invite the press, favorable to works of Internal Improvement, to discuss the subject for the consideration of the people; for, we feel assured if it is permitted to slumber until the meeting of the General Assembly, no act giving aid to such works will receive the sanction of that body. For notwithstanding a member of the Legislature might, as an individual, be in favor of the measure, yet he would not feel authorized to vote for it, without knowing the sentiments of his constituents. We have often heard the Legislature of Missouri abused for its neglect of Internal Improvement; but we do not remember to have heard that any specific plan has ever been offered for its consideration. Let those who have been in the

habit of complaining bring forward their plans and discuss them: they cannot expect others to adopt their views without making them known; and if they neglect or refuse to do this they should cease to complain.

ART. II.—WESTERN GEOGRAPHY,

COMPRISING ALL THE TERRITORY WEST OF THE MISSISSIPPI, NORTH OF NEW MEXICO AND EAST OF THE MAIN RIDGE OF THE ROCKY MOUNTAINS.

The Territory comprised within the bounds of the 49th parallel on the North, the Mississippi river on the East, the Arkansas and Red rivers, so far as they formerly constituted the line between the United States and Mexico, on the South, and the Rocky Mountains West, contains about 600,000 square miles. If we add to this the Territory contained within the original limits of Texas, West of Louisiana, the result will be near 630,000 square miles. Of this vast extent of country about 46,050 square miles are comprised within that portion of Louisiana lying west of the Mississippi river; 54,617 within the boundaries of the State of Arkansas; 66,000 within the boundaries of the State of Missouri, and about 45,000 within the boundaries of the State of Iowa; leaving about 420,000 square miles as the extent yet remaining in the great Western Territory. The Territory of Minnesota contains 128,786 square miles, that portion of Texas which we have mentioned, 30,000; and the Territory of Missouri proper about 266,214.

Of the Geography of the States West of the Mississippi it is not our intention to treat at large. The material facts may be found in a variety of other works. We will only sum up a few of the leading features, in order to give completeness to what we design saying in reference to that portion of the West yet unoccupied by civilized men. The soil of all the States is excellent, for the most part. That of Iowa and Missouri rests upon a limestone basis, and is fully equal if not superior to the soil of the States of Kentucky and Tennessee. A portion of the soil of Arkansas has the same foundation, and the remainder, together with nearly the whole of Louisiana, consists of alluvion deposited for ages by the great streams flowing from the West, and is very deep and of wonderful fertility. The State of Iowa is bountifully watered by a multitude of streams, which originate from or expand into a large number of lakes, filled with fishes, and these streams are fringed with fine forest trees, such as the oak, the hickory, the walnut, the ash, the maple,

the elm and the cottonwood. The States of Missouri, Arkansas, and Louisiana are also abundantly supplied with streams and rivulets, garnished with noble timber trees, and abounding in a variety of fishes. In all these States, the highlands between these water courses, expand into open rolling prairies, the soil of which is generally fertile, and producing a variety of rich grasses and succulent shrubs, but in some locations destitute of springs. The only sterile portion of land within the States is that which is intersected by the main chain of the Ozark mountains and their spurs, which take their rise near the Southwest corner of Arkansas, traverse the Western portion of that State, and the Southern portion of the State of Missouri, at an elevation of from 500 to 1,500 feet above the level of the Gulf, with a general bearing Northeast, until they break into spurs and knobs along the highlands which separate the waters of the Missouri from those of the Mississippi. This chain of mountains presents a succession of rugged ridges, precipitous heights, sterile plains and small fertile vallies, where the bleak aspect of the mountains, occasionally tufted with stunted trees and lifeless mosses, exquisitely contrast with the dark and shadowy gorges and the deep green vallies, all of which are more or less illuminated by the sun, and relieved and adorned by dashing cascades and pellucid streams.

The predominant feeling on first entering the vast plain which stretches from the line of the States to the base of the Rocky Mountains, is that of profound melancholy. The immeasurable expanse, apparently without distinct features to attract the eye, or fix the attention, spreads out into one monotonous series of gentle undulations. The eye labors in vain over ridge after ridge, until wearied and heavy, it is lost in dizziness of distance. Suddenly separated from friends and kindred, from the sympathies of social intercourse, the charms of the domestic fire-side, the familiar faces and well known objects of his daily routine, with all the habitudes of mind and action disrupted, and without a solitary object in unison with the feelings, the Pilgrim is alone with his God! The powers of the mind turn inwards, for occupation and relief. Imagination moves upon the troubled waters of memory, until dim and indistinct, the far off scenes of early youth are slowly awakened from their long sleep; gentle and innocent faces of playmates and the hills, and vallies, and streams, the scenes of many a gambol and prank of childhood, and anon the wild energies of youth, and the vaulting ambition of early manhood, with its brilliant hopes and confident anticipations, all array themselves as in a mirror for his contemplation. But the wounds of the spirit will not bear the probe, and egotism herself would soon revolt from self contemplation. Aroused from his reverie, with his senses stimulated and sharpened, the traveler eagerly looks

and listens for new objects of interest, and soon he discovers that the scenes through which he is moving, if entirely different from those of his habitual haunts, are marked by new peculiarities. One by one, the features of the country are developed—at first scarce perceptible—at last distinct and clear, saturating his mind with new beauties, and filling it with original forms. Near him, the surface undulates, as the ocean after a gale, and in the distance, waving blue lines, flanked by *buttes* and knobs, and fringed with trees, mark the windings of many streams. Upon the prairies, the tall rich grasses occasionally cover the surface for miles and miles together, scarce interrupted by any thing else; then the wayfarer will discern bunches and zigzag lines of alder, of hazle and interlaced vines and briars, and again large spots will be enriched by boquets of wild roses, and flashing flowers; filling the air with fragrant odours, and outvieing in grace and beauty the rarest exotics. There the gentle harebell, the carnation rose, the blue violet, the gaudy piony, the modest daizy, the simple butter cup, the fragrant sweet briar, the purple amorpha, and an endless variety of shrubs and flowers, are set as gems upon the deep green verdure of the plains, delighting the eye with their brilliant hues, and enriching the imagination with gorgeous pictures of grace, beauty and grandeur.

The face of the country presents a nearly uniform sucession of ridges and vallies, marked by curved lines, nowhere expanded into dead flats, save in the river bottoms, broken into knobs and bluffs along the streams and along the entire skirt of these bottoms, but never too much so to prevent a profuse growth of grass everywhere. The soil for upwards of two hundred miles westward has nearly the characteristics of that of the adjoining States. From the Arkansas boundary to the cross timbers, the highlands are fertile and beautifully variegated with open prairies and tufts of forest trees and glades, with an occasional intermixture of small spots too flat and marshy for cultivation. The river vallies consist of a deep rich loam, in some places subject to inundations, but for the most part tillable. That portion adjacent to the boundary of the State of Missouri, including the sources of the Neosho, the Verdegris, the Marais de Cygnes and other tributaries of the Osage, and the lower section of the Kansas river, is unparagoned for the fertility of its soil, the value of its timber and forest trees, the beauty of its rolling prairies and broad vallies, the number of its pellucid streams and rivulets, and the salubrity of its climate. Though this first section of the great Western Territory is more scant of timber than the adjoining States, it equals them in fertility and water courses, and surpasses them in the purity of its atmosphere. Traveling due West from Independence, in the State of Missouri, this dark fertile soil ceases at

Sandy Creek, a tributary of the Kansas; moving on the route to Santa Fe, it commences deteriorating at Council Grove near the Neosho river, and becomes more sterile thence to the Arkansas; and farther North it is intersected by the Platte river with its double line of sterile bluffs. It is remarkable that this change of soil is not gradual traveling due West, but sudden and palpable to the most careless observer. At Sandy Creek and at Council Grove the traveler sees the last timber trees, properly so called, until he approaches the spurs of the Rocky Mountains; and at these points it is that the caravans of emigrants and traders usually make a pause to provide themselves with timber to rectify any accident which may occur to their wagons.

South of Platte river this fertile district is contiguous to one directly West of it, where the soil is so intermixed with sand as scarcely to be perceptible, save in its luxuriant grasses and shrubs, which extend several hundred miles towards the mountains, and is again succeeded by a strip of fertile dark soil along the eastern slopes of the mountain chain. The vallies of the Platte, Arkansas, Kansas and Red Rivers, consist generally of rich alluvion, freely interspersed with sand; and the high dividing ridges between those great streams become more sterile, as we recede from the waters, until upon their summits the grasses become stunted, and present a withered and sickly appearance.

North of the Platte river, and adjacent to the first district, and between its North and South forks, the whole soil is largely interspersed with a formation of marl and earthy limestone, so tenacious in some places as to be nearly as much indurated and give the appearance of the yellow soap stone of our streams, but this extensive district is also intersected by ridges (not of desert) but poor soil. It is in this district that what are called *buttes* by the French and *Cerros* by the Spaniards, make their appearance. Custom has, however, enlarged these terms to include what we denominate bluffs and knobs. It is as if the whole surface had suddenly and regularly sank, leaving points and portions of various sizes, and forms from twenty to three hundred feet above the plains. The sides of these *buttes* are nearly perpendicular, and their upper surfaces flat and covered with grass. This is the formation of which the Court House, the Cathedral and the Chimney rocks of the Platte river are composed. These formations are so called because at some miles distance, they bear a rude resemblance to the things from which they are named. Col. Fremont has only mentioned one of the Chimney rocks of which he has given a lithograph. There were two in the summer of 1843. As the tallest of these is one of the grand land-marks of traders and hunters, it should be mentioned that it is (or was) about two hundred feet high.

Between the forks of Platte river, at a place called Goshen's Hole, this formation has been worked into an extraordinary imitation of a massive fortification. At a little distance it strikingly resembles masonry; and it sweeps round an area of two or three hundred yards in diameter in the form of a half moon, terminating in immense bastions with domes and minarets along the whole line of the parapets. This formation juts for some distance across the South fork of the Platte presenting a variety of strange and fantastic forms.

On the head waters of White river there is a space of near thirty miles in diameter broken into *buttes* and towers. Some miles off, the traveler sees gleaming in the sun the outlines of a fairy city. Palaces and walls and fortifications shine and frown upon the surface, and steeples and domes and minarets in innumerable fantastic and beautiful forms shoot up to the height of several hundred feet. It is similar to the optical delusions, described by Parry and Scovesby, in the masses of ice in the polar seas, or the extraordinary phenomena sometimes exhibited by the refraction of light in the atmosphere, portending, in the estimation of the ancients, the fall of thrones and the revolution of empires. But the delusion soon vanishes, and nothing is presented to the eye but cold, dead masses of marl and earthy limestone, worked into picturesque forms by the power and the caprice of the elements. Scattered through this city of clay, we found great numbers of petrefactions on the surface, principally of turtle, some of which were fifteen inches across the back, and the whole body, shell, legs and intestines perfectly hardened into stone. A few wolves' heads may also be found, with a multitude of small shells and molusca. This spot is very celebrated among traders and trappers, not only for its curiosities, but because of its having been a great Indian battle ground, time out of mind. It is also a place of refuge and security for traders, when pursued by hostile bands of Indians. Once fairly within it, and the pursuer had as well attempt to thread the Egyptian labyrinth, such a multitude of narrow and winding passages and strange and curious caverns does it contain. The French traders have given it the name of "*Le Mauvaise Terre.*" The fugitive is amply supplied, too, with good water, preserved in a number of great natural reservoirs. It is impossible that such a soil can be otherwise than very productive.

Scattered all over these western savannahs may be seen immense masses of rock, distributed by the subsiding waters of the last great flood, many of them several hundred tons in weight, and only imbedded in the soil to the extent of their specific gravity. Towards the western section also, trees of the largest size have been hurled from the mountains by torna-

does and hurricanes, and deposited in the plains hundreds of miles from the spot of their nativity.

The district between the Missouri river and the forty-ninth parallel, and west of the territory of Iowa, is a succession of rolling prairies, the soil of which is tolerably fertile, though rather dry and too freely intermixed with sand. They support a thick, grassy sward, which yields an abundant pasture to innumerable herds of bison and other animals; and the grizzly bear, the fiercest of all the North American land animals, has selected this as almost the only prairie district into which he will venture from the mountain fastnesses.

The territory of Minnesota is a beautiful and very fertile district of country, strongly contrasted in its conformation with other sections of the United States. It is neither mountainous nor hilly, nor is it a dead flat. There are hillocks, ridges and uplands, but they are characterized by a longitudinal and horizontal, instead of a vertical projection. Without exhibiting either marked and mountainous features, or dead, sterile vallies, the surface is sufficiently variegated with eminences and depressions, and contrasted in curving ridges and undulating plains, decorated with limpid lakes and streams to give it an aspect of deep interest. The soil, too, is rich, and the waters and woods so disposed as to render it one of the most desirable residences in the world, as well as one of the most beautiful and picturesque.

The basin of the Upper Mississippi is separated from that of the Missouri by an elevated plain, the appearance of which, as seen from a distance on the east or west side, has suggested to the early traders the name of the *Coteau des Prairies*. It would probably be more correct to designate it as a Plateaux, because its aspect suggests to the mind an idea different from that of *a plain*, though it includes it. The northern extremity of this plateaux is in latitude forty-six degrees. From thence it descends and expands to latitude forty-three degrees; after which, it loses its distinctive elevation above the adjacent plains. Its length is about two hundred miles, and its general direction from north north-west to south south-east. The head of this plateaux, called *Tete du Coteau* by the French, is about fourteen miles across. Its elevation above the ocean, is one thousand nine hundred and sixteen feet. As it stretches southward, its surface becomes undulating, breaking into dividing ridges, which separate the waters of the St. Peters and the Mississippi from those of the Missouri. At the forty-fourth degree its breadth is about forty miles, and its elevation is reduced to one thousand four hundred and fifty feet.

The plain which expands from the northern extremity of this Plateaux, is a most beautiful and picturesque tract, diversified with hills and valleys and woodlands, and intersected with

crystal streams and silvery lakes. This is the most elevated spot between the Gulf of Mexico and Hudson's Bay. From its summit the prospect is magnificent; extending over the broad valley of the Red river of the north, the forest-crowned summits of the *Hauteurs de Terres* at the sources of the Mississippi, and the granite valley of the St. Peters. This Plateaux is thickly timbered at its head, and for some distance southward; but its groves become rarer as we descend, until the whole elevation melts into the lower plains. In the head of the great Plateaux, some tributaries of the Red river, the St. Peters and the Jacques river, take their rise, and flow respectively north, south, and south-east.

Another of these great Plateaux is that which is interposed between the sources of the St. Peters river and those of the Mississippi, and which has received the name of the *Coteau du grand bois*, because of the dense forests which crown its summits. It stretches in a serpentine course from the vicinity of the sources of the Red river, to the head of the Witikantu, a tributary of the St. Peters.

A third vast Plateaux has been named by Mr. Niccolet the *Plateau du Coteau du Missouri*, and is interposed between the Jacques and Missouri rivers. It is a rolling prairie, about five hundred feet above the waters of the Missouri, the soil of which is a mixture of sand and gravel, covered with a short, sweet-scented verdure. It expands from the narrow surface between the rivers near the junction, indefinitely north and north-west.

The territory of Iowa and Minnesota is sprinkled all over with groups and chains of lakes, united by streams and rivulets, all of which finally unite in the formation of its great rivers. Within the whole territory there are probably not less than three hundred of these lakes. The region between the head branches of the Des Moines and the river St. Peters is so thickly strown with them that Mr. Niccolet, with admirable taste, has bestowed upon it the name of the Undine region, from an exquisite German tale so designated. All of these lakes are literally crowded with fine fish. Only one of them is tainted with animal deposits. This is the Mini-Wakan, or Devil's lake, situated under the forty-eighth parallel, near the sources of the Shayenne Oju river. It is irregularly formed, with an extension varying from twenty to forty miles, and studded with islands. Its waters are too brackish to be drank, except by horses and cattle. After evaporating a quantity of the water, an analysis of the residuum exhibits a mixture of sulphate and hydrochlorates of soda and magnesia; and the soil in the vicinity of this lake is frequently found covered with saline efflorescences.

The principal rivers of this territory are the Mississippi, on its eastern boundary, the Des Moines, (or Mo-in-go-na,) the St. Peters, the Red river, the Little Sioux, and the Jacques.

The falls of St. Anthony, immediately above the mouth of the St. Peters, is the head of steam navigation upon the Mississippi. It is supposed by Mr. Niccolet that but a little expenditure would render the St. Peters navigable for steamboats some distance above its mouth.*

The course of the Des Moines is not less than four hundred miles. It is navigable for steamboats a distance of 150 miles. and for flatboats nearly up to its source. The name *Moingona* is a corruption of the Algonquin term *Mikonang* (at the road.) The river is called *In-yan-sha-sha-watpa* by the Dahcotah's, which means Redstone river. Its source is at an elevation of 1580 feet above the Gulf, and its mouth 400 feet. The *In-yan-yanke*, or little Sioux river is a small stream heading in the *Coteau du Prarie*, not far from the course of the Des Moines. It is a short stream, and only navigated by canoes.

The Tchan-kasn-data, or Big Sioux, is a stream of much importance, which rises from a group of Lakes, in the head of the Coteau du Prairie, and flows nearly due south to the Missouri, a distance of 350 miles. This is the stream mistaken by Capt. Carver for the Missouri. It is navigable for pirogues and canoes.

The Wassechr, or Vermillion river, is only sixty miles long, and issues into the Missouri between the Great Sioux and Jacques rivers.

Tchan-san-sar or Jacques river, rises near the salt water region, in the vicinity of the Devils Lake, and flows a little east of south into the Missouri, a distance of over 450 miles. It is navigable for a craft of considerable size.

He who casts his eye over the broad territory south of the Missouri, and west of the States, will discover that it is deficient in streams of any size, and he who has traveled over it will inform him that the tributaries of the large streams are few in number, and that springs and rivulets are of much rarer occurrence than within the adjoining States. The wanderer is seldom without water of some kind more than one or two days, but he is frequently compelled to content himself with a draught from small ponds and *slews*. Intervals of many miles between fountains and brooks are of frequent occurrence. This spar-

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* "The name of St. Peters, (the St. Pierre of the French,) it appears, has been unanimously given to the spot at the mouth of the river, but whence the name, is not known. Father Hennepin who was the first to visit the Falls of St. Anthony in 1680 makes no mention of this river; but his book is written very confusedly, and as he gives no details of his route, perhaps had no occasion to visit it, and was also molested by the Sioux, the omission is explicable. On the other hand, Lessuer in his Journal of his third journey in 1700, names the St. Peters as familiarly known and acknowledged by Traders. As for my part I have no hesitation in assigning its origin to a Canadian by the name of Dr. St. Pierre. who resided for a long time therabouts. Carver, in refering to the supposed fortification which he visited below Lake Pepin, mentions a Dr. St. Pierre, but this was 64 years after the travel of Lessuer. NICCOLET.

sity of streams is no doubt attributable to the rapid evaporation on these elevated plains, which rise gradually from one thousand to six thousand feet above the Mexican Gulf. It is also remarkably deficient in "water privileges." The conformation of the soil bordering the streams, is unfavorable to the construction of locks and dams, and there are few places where water power could be obtained, without labor and expense disproportionate to the benefits to be anticipated. From our own observation, as well as from information derived from many others of excellent practical sense, we have no doubt that "wind-mills" might be constructed almost any where in this territory, which would run as long a period, and with as much certainty, as water mills do within the States. Springs are more abundant in the vicinity of the mountains, and within their spurs rapid torrents rush through the fissures of the rocks, or leap in snow-white cascades from their summits.

The Missouri river runs a course of over three thousand miles from the point of junction of its three head streams, the Gallatin, the Madison, and the Jefferson. It has been navigated with steam boats about one hundred miles above the mouth of the Yellow Stone.

From the mouth of the Missouri, for the first five hundred miles, the river flows through a valley, varying in width from three to six miles, its average width being about three. This valley is bordered by a ridge of highlands on each side, in some places seeming to be continuous, and at others cut into segments and bluffs. The valley has a depth of one hundred and fifty feet below these highlands, and the stream winds through it, sometimes striking the north, and at others the south bluffs. The whole of the river valley is plainly discernible as an alluvial deposit. From the summit of the highlands, the surface slowly ascends towards the plains on the north and the south, and probably at no great distance these plains are elevated three hundred feet above the valley. Major Long made an erroneous guess that the soil would be found to be confined to the vicinity of the river. The soil is in general good indefinitely north, and would have been so indefinitely south, but for the jutting spurs of the Ozark Mountains. The reader must not understand that the highlands along this river invariably appear continuous to the eye. They do so appear as high as the Chariton river. At this point they seem to recede, and again approach near the mouth of Grand river; a little above this again recede, and again approach, and so on at intervals to the mouth of the Kansas. From the Kansas to the Nodaway, the highlands are continuous, and generally about eight miles asunder. From the Nodaway, the northern hills disappear as the river is ascended, except at occasional intervals, and they again approach some miles above the Platte. On the south side,

the highlands skirt the stream close, as high up as the Council Bluffs. From about twenty-five miles above the Platte, the northern highlands again recede, and do not again appear until the mouth of Floyd's river is reached. The highlands upon the south also recede above Council Bluffs, and again re-appear about two hundred miles higher up. The portions of country where the hills recede from the river, is usually more open along the river, and this is especially the case above the Platte river.

The northern hills again recede above Floyd's river, and only appear at long intervals, until the river is ascended above the mouth of Jacques river. The highlands on the south disappear a little above the Omaha river, and do not again appear until in the vicinity of the Calumet bluffs; and from this point onwards for one thousand miles, they stretch along the shore with but little variation. At the mouth of Jacques river, the valley of the Missouri commences narrowing, and thence to the mountains the highlands north and south press more closely upon the streams. The river valley continues, however, though much confined, to the mouth of Muscle-shell river. Above that point it is scarce perceptible, so closely do the hills hug the stream.

The highlands of the Missouri vary in height as we ascend. From Wood river, they slowly ascend, until we reach the Osage; then they again become depressed for fifty miles; and again rise and continue elevated to the Mandan village, when they slowly sink until we reach the Muscle-shell. From this point onward they slowly elevate themselves from three to five hundred feet.

The lower portions of the stream are thickly bordered by continuous groves of forest and timber trees. Above the mouth of the Platte these groves become thinner, and sometimes the river flows for miles through an open space. The soil of the river bottom is a deep rich alluvion, and that of the highlands, for many miles north and south, is very fertile. We incline to the opinion that this rich soil extends much farther from the river than Major Long supposed; and we *know* that there is a much larger surface of it than was estimated by Lewis and Clarke.

It is a maxim of the traders, that above the great bend the snags disappear. This notion they have taken up, because they never descend the river, except when it is swelled. The author can testify, from having descended it in extreme low water, that it is literally bristling with snags from near the mouth of the Yellow Stone to the State line, so much so that the navigation was dangerous in a light canoe.

The spring freshet usually occurs about the first of June, and lasts some weeks. Except during this freshet, the navi-

gation of it downwards with steamboats is nearly impossible above the Council Bluffs, and its ascent in them becomes more difficult as the season advances. The author met a keel boat at the mouth of the *L'Eauqui Court*, on the 20th September, and a very small steamboat at the mouth of the Cheyenne, a little earlier, but the labor and difficulty was so great that neither of them could make over twenty miles per day, and the latter we believe was compelled to lie by a few days subsequently. The owners of the keel boats, (Messrs. Sebill & Co.) originally designed ascending the Cheyenne river, their goods being destined for the north fork of Platte river. We never heard the result, but from our knowledge of the Cheyenne, we have no doubt its ascent was found to be impracticable. In our descent of the Missouri, in a twelve foot canoe, in the month of October, we were cast upon bars daily, and compelled to get out and drag our boats into the current again. The river was then rather a succession of long dead ponds than a continuous stream, connected by necks of narrow and rapid currents. From its mouth upwards, it becomes more and more serpentine, until after passing Platte river the traveler will find himself but rarely in a direct course towards his destination.

It is not correct, as has been stated, that the river derives its turbid waters altogether from the Platte. Some of its tributaries wind through the formation of marl and earthy limestone before alluded to. White river, for example, presents, when slightly swelled, the appearance of thick yellow cream, and is at all times more or less saturated with earthy deposit. Moreover, the banks of the Missouri are continually falling in, and its islands and bars are in a perpetual course of destruction and reformation. But the river is slowly deepening its channel. We know of one place within the State of Missouri, where thirty years since the Indians were in the habit of wading the river, where now steamboats float with ease.

The specific gravity of the Missouri, at the mouth of the Kansas, is seventy-eight, whilst that of the Kansas is only seventy-two degrees, thus showing a much heavier intermixture of sand and earth in the former. This discovery of Lewis and Clarke was subsequently confirmed by Doctor James, of Long's party. The fall of the Mississippi from St. Peters, and the fall of the Missouri from Fort Pierre to the confluence of the two rivers, are in the ratio of forty-five to eighty-five; that is to say, the average rapidity of the Missouri is nearly twice that of the Mississippi. Long's party estimated the current of the Missouri, at the mouth of the Platte, to be at the rate of one fathom per second; in very low water, it rushes through the narrow banks between its ponds, at the rate of twelve fathoms per second, and when the spring rise is at its maximum, it moves at the rate of 720 feet per minute. The

celerity of the Amazon is about equal to that of the Mississippi, and that of the Oronoco much exceeds even the Missouri, descending thirteen inches to the mile.*

The difference of elevation of the valleys of the Missouri and the Mississippi has been determined. The level of the Missouri at Council Bluffs is one thousand and twenty-three feet above the Mexican Gulf; that of the Mississippi at Rock Island, in the same latitude, is only five hundred and twenty-eight feet. Again, at Fort Pierre, in latitude forty-four degrees twenty-four minutes, the elevation is one thousand and fifty-six feet, whilst at the lower end of lake Pepin, in the same latitude, the elevation is only seven hundred feet above the Gulf.

We have ascertained, for the most part by our own observation, that there are in the Missouri river no less than two hundred and ten islands between the mouth of the Yellow Stone and that of the Missouri, besides sand bars too numerous for computation. Of these islands near one-half are timbered with forest trees, principally the plane tree and the cottonwood below the Platte, and gradually intermixing with shrubs peculiar to a higher region as the river is ascended, until finally the predominating growth is stunted cedar and pine. A large number of them are thickly overgrown with swamp willow of several varieties. These facts alone demonstrate the uncertain and shifting character of the stream.

We have also ascertained that the number of streams issuing into this river, from its mouth to the Yellow Stone, is upwards of two hundred. Of these, very few are of any size or length. Those best adapted to navigation are within the boundary of the State, and within the same boundary they are more numerous than they are above the Platte river, until the eastern slope of the Mountains is reached, and here a multitude of rapid rivulets, flowing from the cardinal points, hurry to unite themselves to its majestic current.

Before concluding our remarks upon the Missouri river, we will direct the attention of the reader to some facts of vast importance in estimating the value of water courses for the purposes of commerce, and if he will bear these facts in mind, they will materially assist him in summing up the character of all the streams mentioned in this article. The rate at which the current of this river moves has been already given from Lewis and Clark and the party of Major Long. Now it must be remembered that this rate will vary according to the stage of

*It is to be remarked, that the head streams of the Missouri are clear, and that it slowly acquires its turbid character in its descent, being facilitated in the acquisition by its tributaries. It is also remarkable, that the sands and earths are precipitated by intense cold, and that during the severe weather of winter, its waters are well nigh as pure as those of western streams generally.

the water. If the river was constantly flooded we might make the calculation with some certainty, but during the season of low water, if the experiment be tried, the current will be found to vary with the locality. In the narrow necks which unite the long ponds, it is very swift, whilst in the ponds themselves the rate is varied by many circumstances. From the mouth of the Kansas to the mouth of the river, the fall is two hundred and fifty-eight feet, the distance four hundred miles, and the descent per mile one foot near five and a half inches, provided it be admitted that the bed of the river continually descends without swell or depression. A river which descends continually and regularly, may be very difficult of ascent, whilst one which descends by a succession of cataracts may be very easy of ascent between its falls. Hence it is that in many instances rivers which have their sources elevated only five hundred feet above a given level, may have a current double as swift as those which have their sources at double or treble the altitude.

Of the tributaries of the Missouri, within the State boundary, it is unnecessary to say much. Only two of them, the Osage and the Grand river, have been penetrated any considerable distance by steamboats. On the former, boats occasionally ascend as high as Warsaw, and on the latter as high as Chillicothe; but this can only be done by small boats during the spring freshet.

Taking its rise in the North Park in the Rocky mountains, in latitude forty degrees and longitude one hundred and six degrees forty minutes, the Platte river winds through the mountains north and then east, over rapids and cataracts, until it bursts through the chain and flows rapidly east to a point in latitude forty-one degrees and longitude one hundred degrees and fifty minutes, where it receives the South fork, which takes its rise in the vicinity of the Arkansas and flows in a north-east direction to its mouth. Immediately below the junction, the stream is five thousand three hundred and fifty feet wide, and flows on with an average width of three-fourths of a mile, to its mouth in latitude forty-one degrees and longitude about ninety-five degrees. The bed of the river has many islands well timbered and possessing an excellent soil, as does also the bottom lands. The bottoms are nearly destitute of timber. The river is so shallow, and so capricious in its currents and bars, that it is navigated with the greatest difficulty and hazard by the light boats of the fur traders, and may be set down as altogether worthless in a commercial point of view. Its waters are at all times turbid with fine sand and clay. Two great forks, the Republican and Smoky Hill, which have their sources within the spurs of the mountains, unite in latitude thirty-nine degrees and longitude ninety-six and a half degrees to form the

Kansas river, from whence it flows several hundred miles eastward to its junction with the Missouri in latitude thirty-nine degrees and longitude ninety-four degrees, through a well timbered valley of unparagoned fertility. Like the Platte, it is too shallow and swift to be navigated over one hundred miles in security and certainty.

The Yellow Stone river, rising amid the peaks of the great mountain chains, flows north-east to its junction with the Missouri. This stream, with its tributaries, waters a large and fertile valley, and is navigable for steamboats eighty miles, and for other craft more than two hundred and fifty miles; and here we may anticipate the birth and growth of a considerable colony.

The other tributaries of the Missouri are many of them navigable for canoes and batteaux for some distance above their mouths, but none of them will float boats of much size.

The White river of Arkansas is navigable for steamboats near four hundred miles during its freshets, and the Big Black also for a considerable distance.

Rising within the spurs of the mountains, the Arkansas river leaves them with a breadth of fifty yards, and widening as it flows onward, to four hundred yards, and sometimes one mile, pours its tribute into the Mississippi in latitude thirty-one degrees thirty minutes. Its upper portion is densely timbered, but about one hundred miles east of the mountains every trace of trees is lost, and it flows on several hundred miles through a vast expanse of undulating plains, and again penetrates fine forests near the western line of the State. It is navigable for steamboats as high as the Neosho, a distance of six hundred miles; above this point the navigation is, and must continue bad, even for pirogues. The Washita, one of its tributaries, is also navigable for many miles. The Canadian, another of its branches, rises at the base of the Rocky mountains, and flows through a broad valley of land bounded by bluffs of five hundred feet high, a distance of one thousand miles, to its confluence with the Arkansas about five hundred and fifty miles above its mouth. Two hundred miles of its lower portion flows through a valley of unbounded fertility, shrouded in rich masses of trees, shrubs and flowers. Its upper portion is over arid deserts which, for the greater proportion of the year, drink up the whole of its waters, leaving its channel entirely dry.

The Red river rises east of Santa Fe, in the mountain spurs, and flows south-eastwardly to its mouth in latitude thirty-one degrees. This river is navigable about five hundred miles, to the Great Raft. In very high water small boats pass several hundred miles above the Raft. Its name is derived from the red argillaceous earth it holds in solution.

The waters of this section hold in solution a proportion of

common salt and sulphate of magnesia, which, in many instances, render them too brackish and bitter for use; and all of these streams are more or less colored during freshets with red earth, or soft sandstones. Red river thus derives its name.

The author was informed by Mr. Andrew Dripps, (formerly an Indian agent, and a very estimable gentleman,) that he has been repeatedly assured by old trappers, at a period when he was one himself, that the head stream of Yellow Stone river, and the head stream of Lewis's Fork of the Columbia, both have their sources in a lake on the summit of the main chain of the Rocky Mountains. The account states that the lake is near two miles in length from north to south and very narrow, and that there is a current in it to its extremity, where an immense mass of granite divides its waters nearly equally, one portion precipitating itself from the eastern and the other from the western side of the summit. If this account prove correct, (and it is tolerably well attested,) what a theme for the Poet! Moore has given us a sweet song upon the "Meeting of the Waters," but who, since the death of Byron, can sing such a parting of the waters as this?

A fact nearly similar is stated by Mr. Ross Cox and others. "At one, P. M.," says he, "we arrived at two small lakes, between which we encamped. They are only a few hundred feet each in circumference, *and the distance between them does not exceed twenty-five or thirty feet.* From them two rivers take their rise, which pursue different courses and fall into separate oceans—the first into the North Pacific, while the other, a branch of the Attabasca, unites finally with the Unjiga and Mackenzie, and issues into the Arctic sea." Lewis and Clarke found the source of the Missouri within a mile of the waters of the Clarke; Fremont, those of the Sweet Water within a mile of those of Green river; and the sources of the Arkansas and Platte both *interlock* with branches of Grand river, a tributary of the Colorado of the West.

Lakes, lagoons, and bayous, abound in the delta of the Mississippi, and over the great alluvial formation extending six or eight hundred miles up the Arkansas and Red rivers, but we know of no lakes south of the Missouri and west of the states, in the great western territory.

An error committed by Major Long, in consequence of relying too implicitly on the representations of the men of the mountains, who delight in magnifying the wonders of their wild home, deserves special correction, inasmuch as he was officially engaged in the examination of the country, and consequently has been looked to with greater confidence for correct statements of fact, both in Europe and America. This error is quoted so recently by M. de Tocqueville, in his great work, that we are warranted in concluding that it is yet the

prevalent opinion among men of science. The statement is, that from a line drawn parallel with the twentieth degree of longitude, from the Red river in the south to the Platte northward, and from thence indefinitely north, the whole country is "unfit for cultivation, and of course uninhabitable by a people depending upon agriculture for their subsistence." It so happened that Major Long, in following the line of the Platte river to its forks, and thence across and along the south fork of it, passed over the only remarkably sterile district in the territory. The truth is, that many considerable exceptions must be made to this sweeping denunciation. From the forks of Platte westward, there is a broad strip of marl and earthy limestone, extending from the south fork north to the Missouri. North of the Missouri the whole country is fertile, back to the mountains. Along the eastern slope of the mountains, as far south as New Mexico, there is in general a broad bench of fine soil. Within the mountain chain, large and fertile valleys occur. The basin of the Yellow Stone is a very rich district. Large spots of good soil occur between the Platte and the Missouri. And the river bottoms are all fertile near their sources, and become much more so as they are descended. On these facts the author *cannot* be mistaken. They are the fruit of personal observation, and of inquiries directed to intelligent and competent sources. Entire deserts never occur, save in a few narrow strips along the Arkansas and Canadian rivers. South of the Platte and east of its forks, cultivation will be confined to the river bottoms, whilst the highlands will afford pasturage for flocks. Sparsity of timber constitutes the greatest barrier to settlement.

Scattered throughout this territory are a great number of insulated table lands or plateaux. They rise from six to eight hundred feet above the common level, and are frequently surrounded by rugged slopes and abrupt precipices, rendering their summits nearly inaccessible. A number of them are in this way perfectly insulated; but others subside into the plains below by gentle declivities from their summits to their bases, on one or other side of the eminence. These tracts are more numerous, but less extensive, near the mountains. These plateaux have been likened, without reason, to the *steppes* of Asia. They are called *mesas* by the Mexicans. The largest of them is known as *El Llano Escatado*, which stretches north to the Canadian, east to the boundary of Louisiana, including the heads of the false Washita and other streams, and expands southward to the sources of the Trinity, Brazos, and Colorado, and westward to the Rio Pecos—embracing an area of about thirty thousand square miles. In places where the brows of these mesas approach a stream closely on both sides, the deep chasms or ravines thus formed are called *canones* by the Mex-

icans, and this term has been extended to include the narrow gorges in mountains, and fissures of rocks through which streams are frequently found rushing in volcanic regions. Even in the open plains the small streams frequently cut chasms which, although only a few feet in width, may sometimes be seen from fifty to one hundred feet in depth.

The stupendous chain of the Rocky Mountains which bounds this vast territory on the west, has been distinguished by a number of appellations, such as the Shining mountains, the Mexican, the Andes, the Chippewayan, &c. Upon the whole, the Mexican portion should be designated as the Anahuac; that portion succeeding, and extending to the forty-ninth parallel, the Rocky Mountains; and the portion north of this line, as the Chippewayan. These mountains are arranged in a west north-west and south south-east direction, and rise abruptly from the plain, towering into ridges and peaks of great height, becoming visible at a distance of one hundred miles. James's Peak is eight thousand five hundred feet above the common level. Fremont's Peak, on Wind river, is thirteen thousand five hundred and seventy feet above the Mexican Gulf, and is undoubtedly the highest peak of the whole chain. The more elevated portion of these mountains are covered with perpetual snow, presenting at great distances a very brilliant aspect. Here nature has undergone her wildest and deepest throes, leaving enormous masses of rugged primitive rock clad in a scattering growth of scrubby pines, oak, cedar, furze, and artimisia.

Formerly this range was deemed impassable, but Mackenzie succeeded in passing it in 1793, at the head of Peace river; Lewis and Clarke, in 1806, found the *North Pass* near the head of the Missouri, a depression offering a good wagon road; and the *South Pass*, accurately described by Col. Fremont, has been known to trappers since the year 1809. Besides these passes, there is a more difficult one at the head of the Saskatchawan river; another, followed by Col. Fremont on his return from California, in 1844; another, by which mule caravans travel from Santa Fe to Monterey; another, in New Mexico, across the Gila river; and several others, which the old trappers have passed with great hazard.

With respect to the climate of the West, the author cannot speak with scientific precision. Many more meterological observations must be made before this can be done; but it is quite easy to give a popula , intelligible, and practical account of it. This whole region is exposed to the influence of the west and north-west winds, refrigerated in their passage over the broad and frozen district of the Rocky Mountains, and rushing down, unimpeded, across the naked plains, quite to the Atlantic coast. Volney believed the temperature west of

the Alleghanies to be much milder than east of them; but subsequent observation has not confirmed his conjecture. The extremes of heat and cold are both greater at the Council Bluffs than at Germantown in Pennsylvania. Extending, as this territory does, through many degrees of latitude and longitude, it may be expected to afford a considerable variety of climate, and this is sufficiently verified by the commencement and progress of the seasons and of annual vegetation. The change is also marked by certain peculiarities in the vegetable products. Vegetation commences at least one month earlier in Louisiana than in Missouri, and some weeks later than the latter in Iowa. Again, it commences two weeks earlier upon the Mississippi than five hundred miles west of it, and three weeks later still at the base of the mountains. The Spanish moss disappears north of the thirty-third degree of latitude. Cotton and indigo cannot be cultivated above thirty-six degrees; the cane brake is never found north of thirty-six and a half degrees, nor the Osage orange above the Arkansas river. Maize reaches its maximum in Missouri, and dwindles from thence to the forty-ninth parallel, where it is of inferior growth. The shrubs and flowers also vary with the progress north and south or east and west. In 1842 the thermometer ranged at an average of sixty-three degrees at sunrise and eighty-one degrees at noon, during the month of June, at St. Louis; whilst, during the same month, Col. Fremont, in passing from the mouth of the Kansas, four hundred miles up its valley, found it at an average of fifty-eight degrees at sunrise and seventy-nine degrees at noon. In 1818 Doctor James says the thermometer stood, during the month of June, at seventy-two degrees to ninety-three degrees at the Washita Springs; and in Iowa, Mr. Niccolet in 1836 found the temperature, at the same season, about seven degrees colder than at St. Louis. The author has seen hail on the 17th July, near the forks of the Platte, and snow at the Arricaara Village, on the 15th September; and this is its usual period of appearance there. It appears later, as the river is descended, until at the State line its usual period of appearance is on the first of November. In the spring, floods of rain descend along the whole course of the Kansas and Platte rivers, washing the bluffs with torrents, and covering the bottoms with deep sheets of water. These rains are not so frequent or copious on the Missouri or Arkansas. The air is kept in perpetual agitation by the winds. The worst of these are from the north and east in winter, bringing terrible snows with them, and the best from the west and south in summer, bringing genial rains. Electrical phenomena increase in frequency and brilliancy as we ascend to the Rocky mountains, sometimes covering the plains with a blinding sheet of quivering fire, and again flashing, spangling, and

shooting into curves and angles of red, blue and silver hues, accompanied with volleys and peals of thunder, under which the very earth quakes and trembles. But on the plains we miss the long, varied and solemn reverberations slowly subsiding in the distance. The undulations of the atmosphere spread, unimpeded, in a uniform series of circles.

Science has so far failed to penetrate with certainty the causes of the existence of the immense prairies of the West. Long, Wells, and others of ability, have satisfied themselves that they are attributable to the annual burnings of the Indians. To this conjecture, the answer is obvious and conclusive. In the States of Ohio, Indiana, Illinois, &c., the prairies are much smaller than in the territory west of the Missouri and Mississippi; and yet the antiquities which denote a former occupation of these States, are much more numerous than in the latter territory. South of the Missouri, and West of the line of the States, there is not a solitary earthen-work, or ancient mound or fortification to evidence the former occupancy of the country. Would this be the fact if it had been occupied at a period coeval with the origin of the antiquities of those States? The causes conjectured are not then sufficient to account for the fact. The vast prairies of the West are ancient floors of the ocean, as a profusion of marine remains amply testify. When it abandoned them, they were of course bare of plants, and must have been slowly supplied by the gramination of plants on contiguous areas, and the distribution of the seed by the winds and waters. In this manner these prairies might long since have been covered with trees as well as germina, if the progress of these natural causes had not been arrested by the introduction of buffaloes and Indians. It may therefore be concluded that these prairies do not owe their existence to the destruction of timber shoots by the animals, and the annual burnings of the Indians, but that they are indebted for their preservation chiefly to these facts. These causes would no doubt be greatly assisted by the nakedness of the soil, and the free admission of the rays of the sun. Forests attract rain, and impede evaporation; but the reflection from the surface of vast plains, scatters the clouds and vapors driven over them by the winds. If the Indians and animals were withdrawn, the skirts of timber would slowly enlarge, and as they enlarged, they would overcome the excessive evaporation by shading the surface, and although the greatest elevations might perhaps be left bare, and the timber every where somewhat smaller than in lower situations, yet the forests would outmeasure the prairies, and the latter would become the exception instead of the rule. This has been the result along the western border of the States, wherever these impediments to germination have been withdrawn.

Mineral springs are profusely distributed over this great territory, especially within the localities where metalic ores prevail, and within the mountain regions. Lewis and Clarke notice the following along the line of the Missouri: 180 miles above its mouth, on Maintou Creek, several salt springs, and a number more higher up—a spring of salts, &c., near White river—and several others still higher up. In Saline county, Missouri, salt water is very abundant. The like is true as respects many portions of Iowa and Arkansas. Around Mini-Wakan lake, in Iowa territory, saline efflorescences are abundant. On the south bank of Platte river there is a copious spring of salt water, and saline efflorescences cover the surface of large portions of the bottoms as with hoar frost. A large district along the head waters of White and Running-water rivers is saturated with salt, and oozing springs of it are freely distributed over it. The Grand Saline, near the Neosho river, 40 miles above its mouth, consists of a number of springs, affording a sufficiency of strong water to justify extensive works. There are a number of *Salina's*, or mines of pure salt. The most northern is fifty miles west of the Missouri, and forty south of the Platte, where the Ottoes and other Indians procure salt. This mine is inexhaustible. Capt Nathan Boon, in 1843, during a journey between the Canadian and upper Arkansas, found efflorescent salt in many places. On the red fork he remarks in his journal: "The whole cove on the right of the two forks of the river, appears to be one immense spring of salt water, so much concentrated that as soon as it reaches the point of breaking forth, it begins depositing its salt. In this way a large crust or rock was found all over the bottom for 160 acres. Digging through the sand for a few inches any where, we could find the solid salt, so hard that there was no means in our power of getting up a block of it. We broke our mattock in the attempt. In many places through this rock salt crust the water boiled up as clear as crystal, but so salt that our hands, after being immersed and suffered to dry, became as white as snow. Thrusting the arm down into these holes, they appeared to be walled with salt as far down as one could reach. The cliffs which overhang this place are composed of red clay and gypsum." Mr. Sibley visited this same plain over thirty years since, and describes the salt as being then even more abundant along the sources of the Canadian and Arkansas. Major Long found a copious quantity of efflorescences and impregnations of salt, and the author has ascertained the existence of it in a number of places along and within the mountains.

The rambler over the plains who is not annoyed with wagons or goods, or troubled with a tent, with only a blanket for his bed, and his saddle for a pillow, has his imagination night after

night put upon the wing. Having nothing to do, he usually lies down as soon as

"Night stretches forth her leaden sceptre,"

and then his eyes are turned to the broad deep blue expanse, where not a dark line or spot is visible, filled with the blended light of every star whose rays have reached us during the profound six thousand years. And he may trace the light filmy clouds, careering through the heavens, curling into unimagined forms of beauty, hanging in graceful folds like a veil of gossamer; streaking the distant horizon with varied and flickering colors, or rising in masses like the outlines of far-off mountains, whose summits are crowned with eternal snow. How profound is his wonder, that amid the busy and grovelling scenes of toil and business, his mind has so seldom been elevated to the contemplation of things so grand and magnificent; that their sizes, their motions, their distances, and the vast and various circles in which they move, should have occupied so little of his attention, and been so seldom appealed to, to elevate his feelings, and animate his gratitude to their divine author. He discovers how futile was the fancy of that poet who complained—

"What lovely visions yield their place"

when science has withdrawn from "the face of creation the veil of enchantment." For the hand of science can never withdraw that veil, but only raises it here, and there to open new fields of beauty for the imagination to revel in, or furnish it with more imposing images of omnipotent power.

The features of the prairie after a time become somewhat wearisome. They are so indefinitely marked, and there is such a constant succession of objects bearing a general resemblance, that the mind tires of the contemplation. The objects, though interesting at first, become too familiar. There is not enough of bold outline, and striking contrast. The forms are too regular and uniform, and the shades blend so imperceptibly that the different portions of the picture are not sufficiently distinct. The same lights and shadows illuminate and darken every locality. But a rich compensation awaits him who has the courage and perseverance to encounter the dangers and privations of the route, when he approaches the mountains. At the distance of sixty miles their snow clad peaks make their appearance above the horizon, dim, white, and indistinct, like a long line of icebergs seen by moonlight. Day after day their forms seem to ascend higher and higher, and their outlines become more irregular and ragged, and at their base a long dark stripe stretches throughout their course, widening and widening, until it seems like a dark and fathomless gulf, separating the world of reality from the bright world of imagination beyond. Then this dark void slowly dissolves, and out of its shadows a long line of bleak, sterile, ferruginous *buttes* and rocks, whose

soilless surfaces refuse sustenance, save to a few scattered stunted pines, and lifeless mosses, emerge to the view. These are the Black Hills, the outer skirts of which are diminutive knobs and cones, which increase in magnitude, rising successively to the height of several thousand feet, until united to the great chain of the Rocky Mountains. It is as if the imprisoned fires generated for ages had at last moved the superincumbent masses, swelling them into knobs and *buttes* at the outer circumference, and increasing in power as its activity concentrated, until the hills were pressed up to the clouds, and the mountains "from their deep foundations torn," shattered and riven, were thrown into the upper air, and had fallen into enormous piles of unshapen granite. Into the valleys, hollows and ravines, the *detritus* of ages has accumulated, and the genial and generative powers of nature have created scenes of primeval beauty, reminding us of the prophetic new order of creation which is to spring out of the chaotic elements of a ruined world.

In the winding hollows of the Black Hills, the wayfarer successively sees long valleys of bleak stony surfaces, covered with the stiff, jagged and frosty leaved *artemisia*, and beautiful little bottoms profusely overgrown with grass and flowers, where the mountain sheep, the buffalo and the antelope, delight to ramble, browsing on the rich grasses, and drinking from the limpid fountains which gush from the hill-sides. These are the localities, too, where the hunter finds his richest reward. Stealing around the brows of hills and rocks, whose points shade him from the view, and whose summits prevent the wind from giving notice of his approach; or crawling on the surface through the green curtain of tall grass until he gains a point from which his shot may tell, he rarely returns, if game is in the valleys, without a store of provision to make glad the inmates of his lodge.

But it is beyond, and in the midst of the mountains, that the mind is filled with admiration. In their valleys he may find lakes, and streams, and torrents, and trees and vines, and fruits and flowers—lakes whose broad bright surfaces expand in shining sheets of silver, still and calm as "a slumbering infant," save when their bosoms are disturbed by the flash of the glittering fish, as in their gambols they leap into the air and plunge into the wave; streams and torrents whose limpid waters spring in rainbow-hues from the wild rocks, or ripple and wind in gentle music through the vale; trees whose tall forms, clothed in dark foliage, throw an impenetrable shade over his head; vines whose erratic branches stretches in festoons from limb to limb, bending beneath the weight of their berries; fruits whose rich pungent taste Lucullus would have envied; and flowers whose varied hues flash like the gems and stones on an eastern monarch's robe.

If sated and cloyed with exhibitions of beauty and fragrance, he has but to pass through yonder fissure opened up by the volcano, the dark grey walls of which rise hundreds of feet above his head, and open his eyes upon the scene beyond. He will behold a long dark valley of desolation, upon the vital energies of which the angel of death has set his seal. Broad slopes of discolored marl spread over the surface, with here and there black spots of extinct cinders; huge masses of granite tumbled in inextricable confusion, with their ferruginous sides discolored with age, and plains of sand, and fragments, under the hollow surfaces of which the hoarse, roaring, and pent up waters struggle for an outlet.

If scenes of grandeur and sublimity are desired, let him ascend the summit of some peak, whose point pierces the clouds far above its rivals. In his progress, he will wind through ravines and around rocks, and labor up narrow paths which the rains and melting snows have washed out; sometimes between jutting cliffs, sometimes on their very outer edge, where hundreds of feet below the tall trees seem diminished into shrubs; and anon he will land upon an immense broad terrace spread thousands of yards around, with a bright lake gleaming in the refracted light, and brilliant alpine plants waving their beautiful flowers upon its margin. But hem ust soon leave this oasis, for when he turns his eyes upward, the goal of his ambition is so far beyond the ken of his vision, that he feels as if, instead of ascending, the whole mass under him had been receding, like the mountains of ice over which Parry attempted to toil his way to the pole. He wades through snow-wreaths which the winds have eddied into the indentations; over bright glassy surfaces of ice, and fragments of rock, until wearied and footsore he at last falls exhausted on the pinnacle. But not long he remains exhausted, for the objects which surround him banish the sensation of fatigue, and re-invigorate all his powers. Far away in the distance, the tiny waves of streams, whose accumulated waters are destined to bear upon their bosom the freighted flats of commerce, wind their solitary way

> "Through mountains, plains,—
> Through empires, black with shade,
> And continents of sand."

Nearer along the broad, successive terraces of the opposite mountains, where the evergreen pine; the pitch, with its stiff, angular branches and sombre hues, and the spruce, with its varied curves and bright green color, are crowded in bunches or strung into zigzag lines, interspersed with shrubs and alpine plants; the drifting snow rests its feathery flakes upon them, awakening in the memory the fabled garden in the story of *Aladdin*, where trees and shrubs of gold and silver were leaved and flowered with precious stones, but without one fragrant

odor to delight the sense. If he turn to the west the bare cones rise in multitudes, with their calm, awful forms, shrouded in snow, and their dark shadows projected far into the valleys, like spectres from the chaotic world, risen from the sleep of ages to contemplate the progress of Time, in moulding the dead matter into organized forms of life and beauty. And if the spirit of the tempest walk abroad, he may see far below the rolling clouds, like a troubled ocean, now throwing up bright crests into the sunlight, then opening into dark fissures, and again heaving in enormous waves, the streaked lightning branching and spangling through their folds;—and he may hear the deep thunder as with plenipotent force it peals through the dark profound, rattles in tremendous volleys, and reverberates through the distant hills.

It is like no other mountain scenery in the world. In all other localities there is the appearance of having been created, and they manifest on their surfaces the predominating principles of order. But here it is as if Nature were struggling against the reign of "chaos and ancient night," and slowly conquering an empire in the boundless infinite. When the senses are absolutely pained with the contemplation, the spectator involuntarily closes his eyes; but even then his imagination is so saturated with overwhelming images, that it labors on in vain through link after link in the endless chain of causes and analogies which bind the visible creation to its eternal Head.

ARTICLE III.

We are pleased to learn that our suggestions, in the July number of the Western Journal, relating to a system of Internal Improvement west of the Mississippi, have been regarded, in different parts of the country, as well timed and worthy of discussion. Though the project of a road commencing at St. Charles and running northwardly, is somewhat startling to most minds, yet, as far as we have heard an expression, all conclude, upon reflection, that it must constitute the great line of communication between the north and the south, and that the wants of the two extremes, and more especially of the north, will in time insure the accomplishment of the work. But many suppose that the time is far distant when the population and commerce of the region through which the road would pass, will be sufficient to sustain it. These individuals do not take into consideration the extraordinary tide of emigration that is flowing into Iowa, and that the prairies of that

State produce a full crop of wheat, when sown on the sod the same season that it is broken. In such a country, the agricultural resources are as fully developed in two or three years after settlement as they generally are in timbered districts in ten, or perhaps fifteen years; and we hazard little in asserting that if the road should be completed to the Missouri line, in three years from this date, it would receive business enough from the State of Iowa alone, to pay a respectable profit on the investment. The emigrants to Iowa have none of the traits that distinguish the backwoodsman. They are educated and inured to habits of industry, and having been accustomed to the comforts of civilization, require such facilities of commerce and social intercourse as are but little cared for, or perhaps not thought of, by the older inhabitants of the west. The route which we propose will penetrate the centre and heart of a State which, in ten years from the present date, will, in all probability, contain one million of inhabitants, whose commerce with the south, for four months in the year, can be carried on only by means of this improvement.

In view of these considerations, we are persuaded that the work cannot be commenced too soon. Let the Legislatures of Missouri, Iowa, and Minnesota, act promptly—grant charters, and memorialize Congress for a liberal appropriation of public land in aid of the enterprize; and if such an appropriation should be made, and followed with energy on the part of the people, the work may be commenced under the most favorable auspices, within two years from the present time.

We copy the following article from the pen of the talented and judicious senior Editor of the Burlington Telegraph, for the purpose of showing how rapidly population is spreading over the fertile and beautiful plains of Iowa:

SYSTEM OF INTERNAL IMPROVEMENTS WEST OF THE MISSISSIPPI.

Let us take it for granted that the violence of the present storm, which threatens the Union, will soon subside, and be succeeded by a prosperous calm; and, ceasing to look to the dissolution of our confederacy as one of the probable events of the future, let us turn, for a moment, to the consideration of those subjects which may soon become of local and special interest to us all.

In a late number of the *Western Journal* (a monthly publication of much merit, issued at St. Louis) we notice an article which treats generally of a system of improveemnts, yet to be projected, as necessary to the full development of the resources of the vast region of country lying west of the Mississippi river, and particularly of a railroad, starting at St. Charles,

and traversing the State of Missouri in a north-westerly direction, and thence extending northward through the State of Iowa, on the dividing ridge between the Mississippi and Missouri rivers, to the Hudson's Bay settlements—to be constructed mainly by donations from Congress, and to be completed as the wants of the times may warrant.

This proposition, at first blush, may strike a majority of readers as singularly extravagant, and as some half century in advance of the age. Yet a little reflection may be sufficient to convince even the most skeptical that the proposition has something of a reasonable basis, wild as it may seem, in existing facts.

Missouri is amongst the oldest and wealthiest of the western States; and people generally, without stopping to apply the figures, would readily yield the point that a railroad, traversing any portion of the State, particularly any portion north of St. Louis, "would pay," if we may use the short hand of the day. So well satisfied are we of this fact, from personal observation—from a knowledge of the character and extent of the population—and from the richness of the soil and its abundant and various products, that we would deem it altogether superfluous to go through the tedious process of calculation in order to arrive at a proper understanding of the matter.

This point being settled, it remains to inquire into the state of facts at home. With a larger extent of available farming lands than Missouri, a soil equal, if not superior, to the best that she can boast, and a climate equally as propitious to the abundant productions of the "kindly fruits of the earth," what is there to prevent the State of Iowa from presenting, at an early day, the same reasons now seen to exist in the State of Missouri to authorize the improvement contemplated? We are, as a State, but little if any behind Missouri in point of actual settlements, (we mean good farms and industrious farmers,) and but for her 80,000 people, crowded within the narrow limits of St. Louis, (and leaving out her blacks,) we should probably exceed her in actual population. Doubtless the census of 1860 will throw us greatly in advance of her in every respect—for it seems to be the destiny of all free States greatly to outgrow and soon to overshadow their slave neighbors. Missouri herself furnishes the most striking proof of this fact—for, with greater advantages and more internal resources than any other two States in the Union put together, she has long since been overhauled by, and now lags dreadfully in the rear of her nearest neighbor, Illinois; and now comes the young and booming Iowa, with but three winters on her head, almost ready to contest the palm with her on any point.

We incline to the opinion, therefore, that, on the average, we are about as well prepared to enter upon such an enter-

prize as is our neighbor on the south; at least, we may, if we choose, with the same propriety, begin to agitate the question with the view of bringing it before Congress at some future day. If it ever becomes the true interest of Missouri to intersect us at any point with any improvement of this description, it will certainly become our interest to aid and encourage the enterprise.

It is but some dozen years since the people commenced emigrating, in any numbers, to Iowa, and forming permanent settlements. Now we have flourishing towns and cities stretched along upon the banks of our noble river for a distance of full three hundred miles, with populations severally ranging from one to five and six thousand, and the country for one hundred and fifty miles in the rear of us dotted over with villages, and blooming as the rose beneath the tillage of a glorious agricultural population. When we recur back to the scenes of but a dozen summers since, and the green and beautiful but then desert plains of Iowa, and the few and scattered frames of the present city of Burlington are called to mind, the advancements made would seem to have been the work of magic, so wonderful has been the change, so extraordinary the result. Young as we still are, we have already lived to see more than the most sanguine could have anticipated at the time of which we speak.

From this fact let us deduce another—that what has been done may be done again. It is but three years since the Pottawattomies left the western portion of our State, and but two years since the Winnebagoes left us on the north. And yet look at the rapid changes which have followed. It is true that on the western side of the State no material settlements have been commenced as yet, but this fact is doubtless owing to the pre-occupancy of the country by a peculiar sect who are not regarded by some persons as desirable neighbors. But these individuals, whether the allegations made against them be true or false, are rapidly leaving for their "promised land," and will not long remain to interfere with the inclinations of our ever westward-tending population. On the north of us, and in that region of country known as the Neutral Ground, and the former home of the Winnebagoes, we are informed that quite a dense population has already been formed, composed of the best class of enterprising farmers. It is a fine country, and must continue to invite settlements for years to come.

Leaving our own State, then, for a while, we pass into what is at present the Sioux country, but which will ultimately form either a new State, or become the most attractive portion of Minnesota. A more beautiful region lies not under the sun, and it is not to be wondered at that the poor Indians should be reluctant to part with it. Its purchase, and the removal of the Indians, will be a signal which will be hailed with delight by

the rushing thousands, and will mark the founding of one of the noblest States of the confederacy. With the Mississippi upon its East, an outlet by navigable streams to the Missouri on the West, and the St. Peters traversing its centre, and navigable for two hundred and fifty miles, there are but few portions of the continent which give promise of a more pregnant future, or a higher destiny. Through this beautiful region it is proposed to continue the improvement towards its ultimate termination. That the requisite population will be there to meet it, and to warrant it, within the space of a brief period, is a fact not admitting of doubt, if we take the history of the past as a safe rule of reasoning.

The trade of the Hudson's Bay settlements amounts to millions annually. At present it is monopolised by British traders, who live there under the protection of a large British military force. If American enterprise should be so far encouraged, by the fostering hand of our own government, as to enable our own traders to enter into competition, the diversion of a large amount of this trade into our own hands would soon follow as an inevitable result. It is cerainly worth looking after.

These facts are crudely thrown together for the purpose of letting our readers know that this subject is engaging the thoughts of active and intelligent minds beyond the limits of our State; and that the public attention is being directed to what may be denominated a series of internal improvements *West of the Mississippi river*, connecting all the parts of this immense region, and extending from the most distant point of the snowy North to the great emporium of the South. It will at least furnish food for reflection; and if the dissolution of the Union should fortunately be postponed until after we shall have thus knitted all our parts firmly together, we shall certainly have a respectable empire left us to retire upon. J. M. Morgan.

ART. IV.—MISSOURI AND IOWA RAILROAD.

Dubuque, *September* 3, 1850.

Dear Sir: I have read the article on Minnesota, in your July number of the Western Journal, and I thank you for having brought that Railroad project before the public. This project is by no means new to me, for it has frequently been a subject of conversation between citizens of southern Iowa and myself during the past two or three years. We thought, however, that it was better to *lie still* for a while, until the Des Moines River Improvement would acquire more stability, and

a fairer prospect of success towards completion; when the extensive and fertile region watered by the upper Des Moines would be sufficiently populous to warrant both schemes. I have often expressed surprise that this subject has never been mooted in any of the St. Louis journals; for it needs no examination of the country—a mere glance at the map will be sufficient—to convince any man, that no cheaper or better route exists on this Continent, than the dividing ridge from St. Charles to the vicinity of Fort Des Moines, between the waters of the Mississippi and Missouri rivers.

When I read the letter of William R. Singleton, Esq., Engiineer of the Independence & Missouri River Railroad, in the Western Journal for May, 1849, I thought he was arriving at the project which you now propose, when he said, "Observe the connection which may be made by a railroad from the mouth of the St. Peters to Lake Superior, and from the mouth of St. Peters to the Des Moines." I was glad to find, however, that his ideas took a more extensive—a national range, "to the head of the Platte and Grand rivers;" but if it be true, as you say, that "a profitable intercourse can only be kept up by means of a railway," then indeed is it time that some Rip Van Winkle should awaken from among the merchants of St. Louis, to see the direction in which the world is moving. You tell them that "the great northern line of railroad, with its branches, will doubtless keep pace with the settlement of the country until it reaches the Rocky Mountains," and you might have added in the same breath, that as "the star of empire wends its westward way," so will the current of trade seek its eastward track to ports on the Atlantic. "The natural laws of commerce may compose a pap on which antiquated nations may feed for a while, but the age in which we live forbids that Iowa and Minnesota should continue to send their mineral and agricultural products to St. Louis, for no other reason than that the Mississippi runs southward! That "great northern line" is approaching the Mississippi at a rapid rate, and you may rest assured that the young and vigorous State of Iowa will not impede its progress. The rival roads of two enterprising young cities on Lake Michigan will cross the Mississippi together at Dubuque. The La Salle and Rock Island road will cross at Davenport. The junction of these roads will be at Iowa City, the capital of the State, and from thence westward the main line will proceed through Fort Des Moines to Council Bluffs. The distance from Council Bluffs to Fort Laramie is at least one hundred and fifty miles shorter than the road from Independence, and a road on a flat, loamy soil bears no comparison to one on a dry, smooth ridge.

A railroad could be constructed from St. Charles to the

vicinity of Fort Des Moines, without crossing a single stream, and at a cost infinitely less than your long-talked of road from St. Joseph to Hannibal. The advantages would be ten fold greater, also, for, as you truly remark, "a system of plank roads, as feeders, will afford all the commercial facilities that could reasonably be desired." "That the work must commence in Missouri," there is no doubt, and it is equally certain, that unless the people of Missouri take the initiatory step, many years may elapse before Iowa or Minnesota will move in the matter," for their interests are not so immediately involved, and their aspirations are led off in another direction. Should Missouri do her part, Iowa will not be wanting; but so far as regards the "incorporation of a joint stock company," she will not, in our day, grant special privileges without holding on by a tight rein to individual liability.

A road from St. Charles to Fort Des Moines would be less than two hundred and fifty miles in length, and would terminate in the heart of a country inferior to none on the globe. The Board of Public Works, in their report to the last General Assembly, say that the United States Geologist speaks in the highest terms of this country, for beauty, agricultural capacity, and mineral resources. "He found coal for two hundred miles along the Des Moines, and heavy deposits of iron ore are also believed to exist. Gypsum in abundance, forming cliffs for miles. Limestone, that makes superior hydraulic lime, exists in abundance. Limestone suitable for lime; clay suitable for bricks; rocks for polishing, for grindstones, whetstones, and for building purposes—some of a superior quality—are found in abundance along the Des Moines. There is also a great abundance of water power in the whole region, and timber plenty throughout most of the country." Col. Curtis, in his report No. 3, on the Des Moines River Improvement, says "A reference to the map will show that such is the distance to the Missouri, Mississippi, and other streams, from Fort Des Moines, that we cannot doubt the reasonable prospect of this point being the centre of business for a country one hundred miles west and north of it." A great surplus of cereal grains, horses, beef cattle, and hogs, is now sent off from several counties in this region, although the settlements of many of them can only be dated back five or six years.

It is doubtful to my mind whether it even would be found necessary to extend this road from Fort Des Moines northward, for the Des Moines river is navigable for steamboats of two hundred tons burden, to near the northern boundary of Iowa. This extension would certainly not be called for for many years, nor until it could be constructed from the proceeds of the first division, for a canal of a mile, or a mile and a half in length, will connect the Des Moines with the waters of the

St. Peters. The country between the St. Peters and the northern boundary of Iowa, is the garden of Minnesota. In truth, Minnesota will have no country to which she can invite the farmer until this country is acquired, and by the construction of this short canal all the surplus products of this fine country would necessarily and naturally flow to the terminus of your road. Whenever the trade of northern Minnesota, or of the Red river of the North, would warrant the extension of your road, it may be done, but not till then.

But, go where we will, the ghost of that Great Northern line of Railroad, or its imps, will hover around us. A union of eastern capitalists, with a view to a concentration of stock, is now strenuously advocated, and in part effected, for the purpose of uniting on the most desirable point to cross the Mississippi. Engineers have examined and reported on the points most practicable to construct one or more bridges, and whatever point may be selected, I suppose it may be taken for granted, as a matter beyond all controversy, that the Council Bluffs will be the favored point on the Missouri river. Another fact which may be taken for granted is, that a railroad will be constructed from Dubuque south-westwardly into the interior of Iowa, as soon as, or before, the Chicago and Milwaukee roads form a junction; and wherever the "Great Northern" line crosses the Mississippi, this road will connect with it, and consequently with your St. Charles road at Fort Des Moines, thus forming a continuous chain from Dubuque to St. Charles. There is a possibility, however that as eastern capitalists become better acquainted with the geography of Iowa, a more northern point may be preferred to cross the Des Moines—first, because it is believed that art cannot construct abutments and piers of sufficient strength to resist the power of the ice which rushes in mountain masses over the Rapids at the breaking up of winter: secondly, because the Chicago and Galena line may be adopted as the main track: and thirdly, because a road can be constructed from Dubuque to the falls of Cedar river, around the head of Skunk, crossing the Des Moines at Boone Forks, and dropping down to Council Bluffs on the ridge between the Boyer and Soldier rivers, at a cost full one-third less than any route which can be selected further south. This route runs due west from the junction of the Lake routes now in progress: it would cross only one navigable stream, (the Des Moines,) about three hundred feet wide at Boone Forks; materials are abundant, and the ground dry and solid. Senator Douglass, of Illinois, has introduced a bill, which is said to have passed the body of which he is a distinguished member, for a grant of land to construct a railroad from Dubuque to the Red river of the North, with a bridge across the Mississippi river at Dubuque, in order to connect

at that point with the Chicago road, and with the west branch of the Illinois Central Railroad. You may therefore expect that your road will meet a rival at no very distant day, in that beautiful country watered by the St. Peters and its tributaries—"a most beautiful tract of land," says Niccolet, "diversified by hills, dales, woodlands, and lakes, the latter abounding in fish."

I think you are mistaken when yon "anticipate that the system proposed (by you) will not meet with favor from citizens near the Mississippi." It is true, as already intimated, that it may appear at first view to conflict with the interests of the Des Moines river improvement, and perhaps with other projects more favored by the people; but I hope that legislators, and men of reflecting minds, will look above and beyond the contracted and selfish notions of a bygone age. There is no State in the Union more highly favored by nature than Iowa. Her whole area is well watered and well timbered. Cereal grains, esculent roots, and vegetables of all descriptions, grow luxuriantly from her soil. Her lead, coal, iron, zinc, gypsum, and other minerals, are very abundant, and no State can afford a better supply of hydraulic power for manufacturing purposes. As our channels of communication with the eastern and southern markets increase, so in proportion will our resources be developed, and trade augmented, our wants supplied, and our untrodden lands will become the home of thousands who otherwise would never think of securing a resting place in the far west. Our first railroad, no matter where constructed, will only be a pioneer to others which will soon follow in rapid succession. I honestly believe that even an incipient movement in favor of the road which you propose, would do much to hasten the Des Moines river improvement towards completion, and the extraordinary growth of population in the territory of Iowa will afford both schemes a profitable business. Be assured too, sir, that your road will not reach the Des Moines before the great northern line will arrive there, *en route* for Council Bluffs. Two years more will probably complete the two lines now approaching the Mississippi from Chicago and Milwaukie, and then will all the energies of our young State be brought into requisition to complete her division to the Missouri river at the earliest practicable period. No, sir, citizens near the Mississippi will not receive your project with disfavor, but they will thank you for the laudable spirit of rivalry which it will enlist. I do not promise, however, that the sympathies of this vicinity will not be with the east, in an effort to probe the undine region and the coteau des prairie of Nichcolet, before our heads are grey. Yankee enterprise is coming on to teach our "young ideas how to shoot."

There is also a country west of the Missouri river which will

claim attention at no distant day. I have made many efforts to procure some official documents on the geology and topography of this vast region, but I can refer at present only to the letters of the celebrated Oregon Missionary, Father de Smidt, of your city, who was employed by Major Harvey to visit the Sioux of the upper Mississippi, in the fall of 1848. He spent four months among these Indians, north of the Platte river, and traveled three thousand miles in different directions, over the country watered by the Platte, the Yellow Stone, the White Earth, the Niobrarah, the Jefferson, the Gallatin, the Madison, the Sascatshawin, the Athabasca, &c. He says that the soil of the plains which he traversed has, in general, a good vegetable mould, producing luxuriant grasses, but above all that the alluvial valleys, watered and crossed by the rivers of the country, appear to be uncommonly fertile and rich. "Woodlands abound more or less along all the rivers, but especially along the banks of the upper Missouri, which presented many a beautiful landscape view as we proceeded on our journey." "Oak, of different species, elms, poplars, ash, sycamore, walnut, hackberry, and many other species of the tree tribe, are found throughout this country." "When American industry shall have plunged the ploughshare into its fertile soil, and guided the harrow from ridge to ridge; when the tide of European emigration shall roll over its undulating surface, then will the character of these plains be changed:" and then, I may add, will the locomotive whistle with its train, over the great northern line, to seaports on the Atlantic? We who reside near the Mississippi know that Iowa has but just thrown off the territorial pinafore, and we look forward to the day when the things portrayed above will have come to pass. We look at what Ohio was when you and I were in our minority, and in projecting a system of internal improvements we move cautiously in view of our high destiny. The spirit of our people is in full keeping with the progress of the age, but example and prudent counsels direct us to move cautiously until we ripen in years, in knowledge, and in resources. Your Minnesota railroad may one day be our central artery, with an arm extending to Dubuque, on the ridge between the Turkey and Maquoketa rivers, in connection with the Milwaukie and Chicago roads. Another to Davenport, between the waters of the Wapsipinnicon and Cedar rivers, in connection with the Rock Island and Lasalle road, to Muscatine and Burlington, between the waters of the Iowa and Skunk rivers, in connection with the Oquawka and Peoria road. The Des Moines river slack-water navigation will form another arm, or in time, when circumstances will warrant, a railroad can be constructed on the beautiful and fertile prairie ridge which divides the waters of the skunk from those of the Des Moines. Similar arms may follow the ridges

between the large streams which flow into the Missouri river, and the great national Atlantic line will intersect them also. Such is the aim of Iowa, and the destiny of the great North-West ere fifty years are past.

With my best thanks for having called forth these desultory remarks by your letter of the 29th July,

I am, dear sir, faithfully yours,
CHAS. CORKERY.

ART. V.—COCO RIVER.

Scarcely any part of the habitable globe is less known to civilized nations than that portion of Central America designated as the "Mosquito Territory." The Indian tribes of this territory were never subdued by the Spaniards. Juarras, in his work on Guatemala, says: "Their love of liberty, added to their national bravery, impelled them to maintain, in sovereign independency, the possession of their mountains, valleys, woods, lakes, and rivers, against the superior art, arms, and even cruelties of Spain." The Mosquito coast is low, and has been generally represented as unhealthy; but the interior is represented by travelers, as being both salubrious and fertile. Owing to the great elevation of some portions of the interior, it affords every degree of climate that can be desired; producing within short distances of each other, the plants and fruits of every climate of the globe. Such a country, located on the great commercial highway between Europe and Asia, as this will be, should the Nicaragua canal ever be completed,—must become, in time, one of the most desirable spots upon the earth; and cannot long remain a wilderness, for savages to hunt and fish in, to the exclusion of civilized man.

The following description of the Caco river is from the pen of an officer in the Nicaragua army, and was lately communicated to the New York Herald by the Hon. Geo. E. Squier, to whom it was directed. Believing that it will be found interesting to our readers, we have given it a place in our journal.

CENTRAL AMERICA---THE RIVER COCO---AND THE MOSQUITO INDIANS.

LETTER FROM THE HON. GEO. E. SQUIER.

Washington, July 18, 1850.

Shortly before leaving Central America, I had placed in my hands, by my friend Colonel Dias, of the Nicaragua army, and Prefect of the Department of New Segovia, a paper relating to the important river of Coco, (sometimes known as the Wanks, or Segovia,) and the country bordering it, as also conveying some facts concerning the Indians dwelling at its mouth

constituting part of the Moscos or Mosquitos, of which we have lately heard so much. As Central America is now attracting a large share of public attention, and as the paper in question conveys a good many fac s of interest, I have taken the trouble to make a hurried translation, which is appended, and which is at your disposal. The river Coco, I may mention, has its mouth in the Cape Gracios a Dios; it is some three hundred miles in length, being the largest stream in Central America, and takes its rise in the Department of Segovia, at Nicaragua, a department unsurpassed for the salubrity of its climate, its agricultural resources, and its mineral wealth. Here are found all the productions of the temperate zone, almost side by side with those of the tropics, a circumstance which, in conjunction with other advantages, will give this section a high value as the country is opened to American enterprise. I am, very respectfully, your obedient servant.

GEO. E. SQUIER.

TO THE PREFECT OF THE DEPARTMENT OF NEW SEGOVIA.

Ocotal, April 25, 1850.

SIR: As you have desired to receive from me an exact account of the observations which I made in my voyage down the river Coco to its mouth, at Cape Gracios a Dios, in 1842, I have the honor to submit the following:—

In making my journey in the year here cited, I did not fail to discover that the river, as high as traffic is proposed to be carried on, is amply navigable, and that there are few obstacles from the point called Coco to that called in the Mosquo (Mosquito) dialect Pailla. Just above the latter point there falls into it a large and beautiful river named Bocay, the mouth of which is near that of the large river Pantesma, on the right hand, descending. There are other medium sized tributaries, among which is the Poteca, rising on the left side of the mountains surrounding the great valley of Jalappa, at a point called Macarali. It is too rough for navigation. There is also the river Coa, which flows from the south along the base of high and steep mountains. It abounds in fish, and the forest is rich in honey, as also in valuable woods, the supply of which could not be exhausted in many years.

I pass now to describe the rapids which commence at the place called Pailla. They are, Gualicuitan, which has a strong current, and a broken narrow channel between the rocks, but which may be passed without the least danger. Ulacuz, which is similar, but without danger, abounding in water derived from the great river Ulacuz, which falls from the right from fearful (Expantosa) mountains, in my opinion extending to the southeast. Guascuru has its rapids, which, though somewhat abrupt,

are without risk in the passage. Quiorox is similar, though there is a fall before arriving to it, around which, however, nature has formed a canal, so that the navigation of the river is uninterrupted. Turuquitan is a rapid or narrows, which is only dangerous for the transportation of cattle, on account of a great rock in the middle of a stream, upon which, if the rowers are not dexterous, the rafts are sure to run. But accidents are rare, inasmuch as the oarsmen are accustomed to this kind of navigation from their youth. Suginquitan is another unimportant rapid. At Crantara the current is strong, but the passage is entirely practicable, as is also the case at Pistalquitan. The rapids of Cairas, at first sight, terrifies the voyager with its rushing, foaming, tempestuous waters, yet does not prevent his passage, for nature has also provided marvellously for overcoming the difficulty, and made a side canal, before arriving at the dangerous point, by means of which the boats can be passed by the oarsmen in an hour, with entire safety. Tilras and Quipispe are the final rapids, and are unimportant.

These are the sole obstructions to the navigation of the river from the point of embarkation to the sea, at Cape Gracios a Dios. At present the descent occupies about ten days. Two days are taken up in descending the rapids here described, and four in ascending them. It will be observed that only about a fifth part of the river is in any way obstructed. The delay in the voyage is chiefly occasioned by unloading and reloading at some of the points above mentioned. From the last named rapids to the Cape, there is scarcely any current, and it is necessary to use the oars. This part of the country, through which the river passes, is very beautiful, being composed of open plains covered with grass and scattered trees. It is a country well adapted to raising black cattle and horses, as also to the introduction of colonies, which, in a few years, could attain to prosperity and riches upon its virgin soil, in cultivating its numerous valuable native fruits, and in consequence of its proximity to the Cape and the great Antilles, affording every means of exportation and a market. Mules and horses may here be raised in the greatest abundance, and profitably shipped to Cuba, Jamaica, and other points where most valued.

It is lamentable to find so beautiful a coast with no other population except a worthless Moscos, (Mosquitos,) unable, from want of education, as unfitted by disposition, to attain to any improvement in the future. I will endeavor to give some idea of their savage situation and customs. Most of them subsist by hunting and fishing, and a very few by a rude and petty agriculture, planting in little patches on the borders of the river, small quantities of plantains, yucas, sweet cane, and cotton, the last of which is rudely spun and woven by the women, in the form of blankets, sails for their canoes, strings for

their bows, and netting for feather-work. Some of their feather-work is quite beautiful. They make a kind of cloth of the bark of a tree, called "uni," which serves for dress and a covering at night. They celebrate the anniversaries of the death of their parents, or friends, with most doleful and unharmonious songs and wailings, which are enough to put the timid traveler to flight. This mourning or lamentation is chiefly performed by the women, under a tent of "uni" bark. Some perform the ceremony walking backwards and forwards for the distance of about one hundred yards, in the following manner: They advance four or five steps, and then fall flat on their chest and face, with a force apparently great enough to kill themselves, repeating the same barbaric ceremony until the night closes. Some paint their faces with achiote or tile, and though they exhibit some skill in this, most are rendered horrible from the operation. They are all very much addicted to strong drinks, and when a dram is given them they exhibit great satisfaction, and endeavor to return some article which their situation enables them to give. But this is done on the moment, and the favor is soon forgotten. They appear kind, and exert themselves to please strangers who may visit their huts; for, though there are among them some bad and disorderly Indians, yet there are very few who will offer any violence to the traveler, principally, however, on account of the fear in which they stand of their chiefs, to whom they pay great deference. For any fault of obedience, or any crime, they are severely punished, so that traders may carry on their traffic with little fear of insult or injury. They are fond of dances, for which they provide fermented liquors of cane juice and yuca in great abundance, and when the day fixed upon arrives, a great number of families collect, all having their faces fantastically painted. When they are gathered, two married dancers open the dance, appearing suddenly from the depths of the forest, where they are previously hidden, dressed in palm leaves, and painted of various colors. These extraordinary figures enter a square covered with *pacaya* leaves, where they dance a whole day, joined by many people. Meanwhile, most of the guests remain in or about the hut of their host, drinking eagerly the fermented liquors, which, being strong, soon upset them, producing violent vomiting. Upon recovering a little, and the sun somewhat declining, the males form their dance apart from the women, making use, as instruments of music, of a dull-sounding drum, and of some great hoarse-sounding pipes of hollow reeds, the noise of which is frightful, accompanied by some small pipes, to the measure of which rude instruments the musicians as well as the people dance until nine or ten o'clock at night. The women, also apart, commence their dance at eight o'clock at night, and continue

until five in the morning. They form a right line, one taking the hand of the other, occasionally separating and shaking a rattling gourd, to the sound of which, accompanied by a low chaunt, they dance. It can hardly be said that any of these dances are worth seeing; but it is certain that, in spite of their extravagance, they do not fail greatly to amuse the civilized spectator.

Some of these Moscos (Mosquitos) raise mares in considerable numbers, and some few cows, besides which, they have a little commerce with Belize, from which place are brought some pieces of clothing, iron pots, guns, axes, and other articles, which are carried to different points in the valley of Pantama, the old Look-out, and to the town of Talpeneca, where they are exchanged for calves of one or two years old, which are carried in balsas (rafts) down to the coast.

The chief, or "king," who at this time governed these savages, was a man of small stature, thin, with an aquiline nose, dark color, descended from Gicaque and Mosco ancestors, and had some education. His residence was generally upon the banks of the river. He was hospitable to the voyagers, inviting them to his hut, and feasting them to the best of his ability while they remained with him. He also insisted on all who were fond of *aguardiente* (rum) to drink until they could not move, on pain of being regarded as wanting in consideration to him.

I might add much more, but must conclude a communication which I fear is becoming tiresome.

Cape Gracios a Dios, unfortunately, has no commerce, but it has a favorable and picturesque situation. It has in front a salt lake of large capacity, which is separated from the ocean by a strip of land covered with mangroves, opening to the sea upon the south, where vessels may enter, to reach the town or settlement. The coast is here occupied by Mascos and Sambos, among whom are one or two Englishmen. One of these is named Stanislaus Thomas Haley, who has about one hundred head of cattle, with some mares and saddle horses. The climate at this point is healthy, as is also that of the valley of the river, for in all my journey I saw but one sick person.

Of the islands on the coast I have no personal knowledge. In returning from the cape, I was occupied twenty days. The distance would not occupy a steamboat like those used on the Mississippi river more than eight days.* Mr. Haley assured me that a road might be opened by which the journey from the cape to this point might be made in six days. He also stated,

* The writer has probably very vague ideas of the rapidity of the Mississippi river steamers. If no insurmountable obstacles exist, it is likely a steamer might traverse the river Coco, from one end to the other, in a day or day and a half.
E. G. S.

that, in his opinion, at a cost of $10,000, the few difficulties in the river, which obstruct the transportation of commodities, could be removed.

Begging you to pardon my errors of language, I submit the above to your judgment, and subscribe myself, &c.,

JUAN FRANCISCO IRIAS.

ART. VI.—INTERNAL IMPROVEMENT AND THE PUBLIC LANDS.

In article three of the March number, 1850, of the Western Journal, is given the drainage on the north and south side of the Missouri river, in connection with a comparison of the routes on either side for the Pacific Railway. In that estimate the whole drainage into the Missouri river on the north, from its mouth up to the Platte river, including all of its tributaries, was given, while on the south side the actual drainage within the State, only, was given. Now, as we went into the State of Iowa and estimated the surface drained by streams which head in that State, let us now return to the south side, and taking the valley of the Osage, follow it amongst the Pottawatamies and other Indian tribes, until we lose it in its interlockings with the Neosho, a tributary of the Arkansas, and we shall find an area outside of the State limits, which is drained into the Missouri river through the south half of the State, of 3,850 square miles. Now, this sum, added to 19,850 square miles, the drainage within the State, and we have the round sum of 23,700 square miles drained into the Missouri river on the south side, against 16,460 on the north side, so far as the route of a railway would be concerned.

The article referred to above, in the March number, was not written with the view or wish of having the effect to draw off any contemplated improvement which might be designed to pass out through the mining and mineral region; this region requires an outlet—a safe, quick and easy passage to market; but it was written with a view of clearing up the insinuation, or rather declaration, that the north side is scarcely susceptible of improvement by the construction of railways, on account of the unevenness of the country, and the much greater drainage into the Missouri river than on the south half of the State. This matter being satisfactorily cleared up—at least, to our understanding—we will venture the assertion, that in no other section of the United States can a railroad be constructed so cheaply, and at the same promise to yield a handsome dividend to the stockholder, as a road from the city of St. Charles—pass-

ing up the divide between the tributaries of the Mississippi and Missouri rivers—entering Iowa, pass along the same ridge, or diverge to the right and strike the river Des Moines at Raccoon Fork, (Fort Des Moines;) thence with the valley of this stream, or main ridge, we enter the Sioux territory and Minnesota at the head waters of Blue Earth river; thence down this stream and the Minnesota river to St. Paul, on the Mississippi river. Nor need we stop, on arriving at St. Paul, for by that time the country far to the north will have become densely populated, and its productions require an outlet to the markets of the sunny south at all seasons of the year. The main trunk, in time, might be continued along the dividing ridge to the head waters of the Red river of the North, and thence down to Selkirk's settlement, on our northern boundary line; thus eventually drawing from this fertile region and the Hudson Bay country, an immense trade, and rolling it southward, finally deposit it in the great Southern Emporium. This route will, in its course, intersect at right angles the Hannibal and St. Joseph, and the Chicago and Council Bluffs, or Milwaukee and Council Bluffs, rairloads. It will afford to the cities and settlements on both the Missouri and Mississippi sides of the main trunk, the opportunity of making branch roads, intersecting at points they may choose. It opens an outlet to northern Missouri and Mississippi rivers at all seasons—during the low water of summer's drouth and the ice-bound season of the northern winter. Fifteen hundred Selkirkers, too, who in times past have done their trading at St. Louis, but now at St. Paul—they, and all their progeny and increase, would run to meet us—not, perhaps, with open arms, but with a road, graded, ready for the superstructure to be laid down upon it.

Nor should we lose sight of the probable fact, that by this route St. Louis may be connected with California sooner than by any other; for the construction of a railroad across the State of Iowa to Council Bluffs amounts to as much of a certainty as any other thing which has not yet been accomplished, and then carried through, or connected with, the great Pacific trunk railway. Thus, with a railway north of the Missouri river, is the trade of the far-off north and the great west secured; and the city of New Orleans is immediately interested, almost, in an equal ratio with St. Louis. Considering this scheme in all of its bearings—as a great thoroughfare of travel—a great commercial highway—developing the resources of the country through which it may pass—a strong arm of national defence—as an iron bond of union—it presents to the mind one of the most important and splendid national works in this vast Republic.

It has been demonstrated by S. R. Curtis, principal Engineer of the Des Moines Improvement, (see Western Journal, Sept.

1849, pages 380–1,) that upon the completion of the work under his charge, freight may be shipped up the Mississippi river to Keokuk, thence up the Des Moines to its forks, and hauled thence by wagon to Council Bluffs, on the west side of the Missouri river, in the Nebraska Territory, at a less cost than it can be, or that it is now, shipped direct up the Missouri river. Now if this be the fact—and it seems to be clearly established as such—freight on the Missouri river must be reduced, or otherwise that whole upper region of country will be accommodated through some interior channel of transportation.

From St. Louis, via St. Charles and along the dividing ridge between the two rivers, we traverse a series of beautiful prairies, and finally Grand Prairie; pass adjacent to immense beds of coal and numerous salines and minerals of various kinds; and it is known, from various official sources, that large districts of country containing valuable deposits of lead and copper ore exist in the North-western Territory, between the Missouri river and Lake Superior. Another fact worthy of note is this, that a railroad can be built from St. Charles to St. Paul, or to Selkirk's on the north Red river, without crossing a single stream of any size; and the course, at the same time, throughout the whole distance, be very direct. It may be asked, where would water be obtained for the supply of locomotive engines? We would answer, by the way side, from ponds made in the head of hollows by embankments made in the construction of the work.

There need be no apprehension of meeting with insurmountable obstacles on the line of our route, as it has been examined and surveyed at different places with a view to the construction of public works across it, and at nearly right angles to all the breaks of contiguous streams. No one has heard of impracticabilities at right angles to our route; much less then may we anticipate meeting with difficulties when running lengthwise the main ridge itself.

As regards the fertility and productiveness of the soil throughout our proposed line of road, we have the judgment of early travelers, and the verdict of intelligent practical farmers. We will not refer back to the judgment of those travelers—Long, Nicolet, and others, in this case, for we know that much land in the west and south, which was, in early times, considered thin and next to worthless, have proved to be, under the management of experienced farmers, the very best wheat yielding lands in the west, and so of cotton lands, in the south. The best proof of the fertility of the soil, then, is the great rush of emigrants to the country; and we never hear them murmur—all contented—they have the best land, the healt iest place in the country, and fewer musquitoes than any of their neighbors.

In view of all that we have said upon this subject, let us bear

in mind that here we are in the centre of the Union, and that high duties devolve upon us. We cannot do without the North, the South, the East, or the West. We were once—not five years ago—the extreme West: but not so now. The West has receded and fallen back upon the shores of the Pacific Ocean; there it lingers a while, hesitating whether or no it shall pass over to China—ere long it will be there!

In conclusion, we mean to urge the importance of the peoples' taking this matter in hand, and petitioning the Legislature for a charter, and memorializing Congress for a donation of land to be applied to the construction of the road. Iowa is moving, and will meet us at the northern line of Missouri.

But we shall be told by many, that this work will and must be constructed after a while, but it is too soon to move in it; the country is too new—in short, that "it is time enough yet!" Alas! this "it is time enough yet!" is the syren song which the evil genius of man has often sung, and is still whispering into the ears of many lost and undone sinners, let us not listen to it: but while we are young—in our youth, prepare for the great work.

But look back and call to mind the mighty strides our country has made within the last few years, and reflect that by next year, or a few years more at most, we shall be much farther advanced, and shall feel that age has not crept, but rushed upon us as a country, and we shall be old.

Just think of the rapid strides our own State is making in population, wealth, and the development of its resources. If this will not suffice, look beyond it, into the State of Iowa, and her minor sister, Minnesota. Two years ago and St. Paul was in the bushes—she now numbers about two thousand inhabitants, and is building steamboats above the Falls of St. Anthony, and setting them afloat on what is there known as the Upper Mississippi river. The country is rapidly filling up with an energetic population, and Minnesota Territory will soon be asking for admittance into the Union.

Burlington, in Iowa, fifteen years ago was in the bushes, and now has a population of about 5000. Keokuk, six years ago, in the woods, has now a population of some 3000. Fort Des Moines, just out of the bushes, has a population of 1500. Besides these, there are numerous other towns and villages, containing from eight to fifteen hundred citizens. These northern brethren have need of an outlet at all seasons of the year, to our southern markets. The northern part of Iowa, Minnesota, and the same latitude on the Missouri river, are closed in by ice and low water from four to six months in the year—by ice from the first of December to sometime about the first of April, and the upper Missouri river by low water several months in the year.

Now in view of all these things, let us see to it that the Legislature, next winter, grant a charter for a railway from St. Louis to the northern boundary of the State. No doubt a more favorable charter can be obtained at this coming session than can be a few years hence; therefore, the more necessity of moving in the premises at once.

Another consideration which renders an early move in this matter of much importance is, that our interests may be represented at Washington City during the next session of Congress, and pray them to grant us two or three millions of acres, to be applied to the construction of the road. This, to many, may seem to be a very extravagant sum; but when we reflect that the State of Missouri contains 43,123,200 acres of land; that the first sales were made in or about the year 1818, and that there still remains on hand, unsold and unappropriated, the aggregate sum of 29,186,000, there is nothing alarming about it, the more especially when our politicians at Washington have become possessed of such an intense degree of liberal and tender feeling for the masses, that they propose to give away all the public lands to individuals who may become actual settlers. Now this appears to us as a radicalism sprung upon the country without giving the people time or opportunity to take it in hand. They should do so, and consider and dispose of the matter themselves.

And while on this subject we have an idea to advance, or rather a claim to put in. It is this: should the public lands actually be donated to settlers, instead of being given to the States in which they lie, to be devoted to internal improvement and education, then we hold that every settler who has purchased land of the government, and paid for the same, has a just claim on the government for the money paid; and even this will not place the first settlers on an equal footing with those who may receive land without pay at the present day; for the first settlers have undergone all the privations of a frontier life—came in without roads, or markets; had the Indians to drive back and conquer; the forests to subdue, and the country to open and build up. Yes, we hold it to be good doctrine, and sound justice, that the early settler has a more valid claim to his equal portion, than the soldier of 1812 in the war with England, has to his equal portion with the soldier of 1847, who served in the war with Mexico. All men will fight for fame, especially if well paid in cash and land. But you might beat the drum and play the fife for a month, and not a single volunteer could you get, who, for the sake of glory, would turn out and cut down the forests, break up the prairies, and bring into cultivation the frontiers of the country. This subject should be taken in hand by the sovereign people, and disposed of in their own way and manner, as may best subvserve the great interests of the country.

COMMERCIAL STATISTICS.

TABLE SHOWING the QUANTITY AND VALUE OF WHEAT AND FLOUR EXPORTED FROM THE UNITED STATES TO ALL COUNTRIES, DURING THE YEAR ENDING JUNE 30, 1849; COMPILED FROM THE ANNUAL REPORT OF THE REGISTER OF THE UNITED STATES.

Whither Exported.	Wheat. Quantity. Bushels.	Wheat. Value. Dollars.	Flour. Quantity. Barrels.	Flour. Value. Dollars.
Prussia	193	288	2	15
Sweden and Norway	.....	.....	110	519
Swedish West Indies	.....	.....	7,573	39,739
Danish West Indies	.....	.....	49,568	246,437
Hanse Town	.....	.....	1,329	7,614
Holland	.....	.....	727	3,789
Dutch East Indies	.....	.....	4,629	27,483
Dutch West Indies	.....	.....	17,221	94,188
Dutch Guiana	.....	.....	3 349	18,813
England	901,940	1,090,188	836,680	4 466,978
Scotland	67,626	85,249	45,608	239,502
Ireland	103,114	125,336	71,527	370,740
Gibraltar	.....	.....	6 262	32,839
Malta	.....	.....	210	1,210
British East Indies	.....	.....	791	4,875
Cape of Good Hope	269	355	4,720	28,274
Mauritius	.....	.....	500	3,447
Honduras	.....	.....	4,125	23,530
British Guiana	.....	.....	38,502	194,207
British West Indies	7,798	10,265	265,049	1,346,231
Canada	140 696	112,086	19,127	78,129
British Am. Colonies	305,383	332,765	294,891	1,518,922
France on the Atlantic	108	100	.....	.....
French West Indies	.....	.....	5,554	22,684
Miquelon & Fr. fisheries	.....	.....	1,701	9,711
French Guiana	.....	.....	1,390	8,930
Bourbon	407	216	.....	.....
Teneriffe & other Canar's	.....	.....	15	73
Manilla & Phil. Islands	.....	.....	60	388
Cuba	.....	.....	7,154	39,247
Other Spanish W. Indies	.....	.....	6,429	33,047
Madeira	.....	.....	4,358	23,171
Cape de Verds	.....	.....	501	3,109
Trieste & other Aus. ports	.....	.....	75	575
Turkey, Levant, &c.	.....	.....	50	300
Hayti	.....	.....	10,903	59,183
Mexico	.....	.....	11,633	59,471
Central Rep. of America	.....	.....	1,180	7,922
New Grenada	.....	.....	3,070	15,727
Venezuela	.....	.....	29 181	149,583
Brazil	.....	.....	314,808	1,885,203
Cesplatine Republic	.....	.....	13,321	70 353
Argentine Republic	.....	.....	6,592	35,936
Chili	.....	.....	5 129	33,004
Peru	.....	.....	1,050	4,716
China	.....	.....	1,177	7,493
West Indies generally	.....	.....	3,984	21,546
Asia generally	.....	.....	105	645
Africa generally	.....	.....	4,617	27,670
South Seas & Pac. ocean	.....	.....	1 180	7,415
Total	1,527 534	1,756,848	2,108,013	11,280,582

The total value of Wheat and Flour exported to all countries, during the year ending June 30, 1849, $13,037,430; of this, $6,377,993 was exported to England, Scotland, and Ireland.

STATEMENT,

Showing the quantity and value of Indian Corn, Corn Meal, and Rye Meal, exported from the United States to all countries, during the year ending June 30, 1849.

Whither Exported.	Indian Corn. Quantity. Bushs.	Indian Corn. Value. Dol's.	Corn Meal. Quantity. Bbls.	Corn Meal. Value. Dolls.	Rye Meal. Quantity. Bbls.	Rye Meal. Value. Dolls.
Swedish W. Indies	1,280	995	2 738	7.992	1,007	3.439
Danish W. Indies	2 850	1,778	28,645	85,753	525	2,154
Hanse Towns	69	56	....	....	....	....
Hanover	250	160	....	....	....	....
Dutch W. Indies	3,222	2,319	1,567	4,700	1,297	4,497
Dutch Guiana	....	....	219	631	....	....
Belgium	180	70	....	....	....	....
England	7,859 642	4,645.450	62 399	185 028	22	77
Scotland	345,316	214 845	1,773	5,321	....	....
Ireland	4,191,284	2,636,381	26,266	84,063	....	....
Gibraltar	6,505	2,994	....	....	....	....
Mauritius	593	423	....	....	....	....
Honduras	552	374	....	....	....	....
British Guiana	15,112	10.161	10.627	30,644	50	163
British W. Indies	197.044	117.705	99 863	284.065	3,497	12,191
Canada	49 621	20 265	1,734	3,868	....	....
British Am. Colonies	221,442	126,791	153,979	434,109	57,166	191 582
France on the Atlantic	....	....	1	4	....	....
French W. Indies	5 372	2,778	524	1,644	....	....
Mequelon & Fr. fisheries	....	....	25	78	....	....
French Guiana	40	28	....	....	20	68
Cuba	12,631	7,117	431	1,152	....	....
Other Spanish W. Indies	928	627	6 859	19,630	17	66
Madeira	93 823	59 072	300	804	532	1,985
Cape de Verds	520	340	....	....	....	....
Hayti	270	186	65	356	....	....
Mexico	223,506	100,596	....	....	....	....
Central Rep. of Am'ca	367	200	1,282	2,700	....	....
New Grenada	2,498	1,074	203	560	....	....
Venezuela	15,647	9,453	4 841	14,175	146	546
Brazil	500	366	210	711	....	....
Cesplatine Republic	2,085	1,402	35	105	....	....
Argentine Republic	....	....	....	....	451	1 480
Chili	....	....	168	430	....	....
West Indies generally	3,860	2,348	249	710	....	....
Africa generally	....	....	68	206	....	....
South seas & Pac. ocean	....	....	58	186	....	....
Total	13,257,309	7,966,369	405,169	1,169,625	64,830	218 248

Total value of Indian Corn and Corn Meal exported during the year ending June 30, 1849, $9,136,094; of this, $7,587,114 was exported to England, Scotland, and Ireland.

STATISTICS OF CALIFORNIA COMMERCE.

The California Courier publishes, on the authority of Col. Collier, the Collector at the port of San Francisco, the following aggregate of duties paid on foreign merchandise, from November 12th, 1849, to May 31st, 1850, together with a statement of arrivals, clearances, &c:

November 12th to December 31st, as per general account current - - -	$201,435 22
January 1st to March 21st - - -	268,981 66
April 1st to May 31st - - -	285,637 84
Total - - - -	$755,974 72
Sail vessels now in the harbor - -	623
Steamers - - - - -	12
Sail vessels at Sacramento City, and other places up the rivers - - -	140
Steamers - - - - -	8
Total - - - -	783
Of this number, there are foreign - -	120
Total American - - -	663

Since March 28th, 1850, to June 30th, the American arrivals are—Ships 72, barks 115, brigs 97, steamers 10, schooners 74; total in all, 368.

Foreign arrivals since the above date—Ships 26, barks 32, brigs 54, schooners 25; total in all, 137; grand total, 508.

Amount of tonnage at this time in the port of San Francisco - - - -	1,020,476
In towns and cities on the San Joaquin and Sacramento rivers - - -	100,000
Total foreign and American -	1,120,476
Of this amount there is now unemployed, at least - - - - -	800,000
Leaving only employed on the whole Pacific and the bays and rivers flowing into it -	326,476

Statement showing the number and class of vessels built, and the tonnage thereof, in each State and Territory of the United States, for the year ending June 30, 1849.

DISTRICTS.	CLASS OF VESSELS. Ships.....	Brigs.....	Schooners...	Sloops and canal b'ts.	Steamers...	Total number of vessels built.	TOTAL TONNAGE. Tons & 95ths.
MAINE.							
Passamaquoddy,	6	9	7			22	4,325 04
Machias,	4	13	13	1		31	5,141 63
Frenchman's Bay,	3	4	21			28	3,459 57
Penobscot,	1	3	13	3		20	3,188 46
Belfast,	8	21	2			31	7,427 84
Bangor,		6	7	2	3	18	1,982 40
Waldoborough,	28	23	25	1		77	19,221 47
Wiscasset,	3	4	4			11	1,929 68
Bath,	37	12	6		2	57	20,240 11
Portland,	22	12	3	1		38	11,256 21
Saco,	1					1	449 44
Kennebunk,	6		3			9	3,600 00
York,				1		1	33 46
Total,	119	107	105	6	7	344	82,255 56
NEW HAMPSHIRE.							
Portsmouth,	8		4			12	6,265 89
Total,	–		–			—	
MSSSACHUSETTS.							
Newburyport,	6		4			10	3,067 61
Ipswich,			3			3	220 10
Gloucester,			16			16	1,107 84
Marblehead,			3			3	193 13
Boston,	20	5	5	1	1	32	13,307 94
Plymouth,	3		1			4	1,103 26
Fall River,	1	1	3			5	742 09
New Bedford,	1	1	3			5	481 73
Barnstable,	1		27	8		36	3,209 19
Edgartown,			1			1	84 39
Nantucket,	1		2			3	368 48
Total,	33	7	68	9	1	118	23,888 84
RHODE ISLAND.							
Providence,	3		2	2		7	1,868 29
Bristol,		1	2	1		4	599 31
Newport,		2				2	592 63
Total,	3	3	4	3		13	2,760 28

DISTRICTS.	CLASS OF VESSELS. Ships.....	Brigs.....	Schooners..	Sloops and canal b'ts.	Steamers...	Total number of vessels built.	TOTAL TONNAGE. Tons & 95ths.
CONNECTICUT.							
Middleton,			8	3	1	12	905 07
New London,	1		15	4		20	1,726 67
Stonington,			6	4		10	881 01
New Haven,	1	1	9	3		14	1,553 46
Total,	2	1	38	14	1	56	5,066 26
NEW YORK.							
Sackett's Harbor,			5		1	6	791 86
Oswego,	1		1	8		10	899 09
Niagara,				2		2	110 70
Genesee,			1			1	57 54
Buffalo,		1	2	2		5	1,789 72
Greenport,			6			6	581 45
New York,	12	7	44	145	17	228	37,933 04
Cape Vincent,	1		4		1	6	1,743 13
Cold Spring,			1			1	197 53
Total,	17	8	64	155	21	265	44,104 26
NEW JERSEY.							
Perth Amboy,			14	3		17	1,317 07
Bridgetown,		1	9	7		17	1,618 46
Burlington,			4	8		12	716 35
Camden,			4	8	1	13	973 22
Newark,			3	1	1	5	876 09
Little Egg Harbor,			5			5	654 32
Great Egg Harbor,			18			18	1,869 94
Total,		1	57	27	2	87	8,025 55
PENNSYLVANIA.							
Philadelphia,	3	2	26	102	9	142	13,741 06
Presqu'isle,			1		2	3	2,320 66
Pittsburgh,					52	52	7,946 01
Total,	3	2	27	102	63	197	25,007 73
DELAWARE.							
Wilmington,	1	5	3			9	1,001 17
New Castle,			12	2		14	879 19
Total,	1		17	5		23	1,880 36
MARYLAND.							
Baltimore,	9	8	41		5	63	12,199 66

DISTRICTS.	CLASS OF VESSELS. Ships.....	Brigs.....	Schooners...	Sloops and canal b'ts.	Steamers....	Total number of vessels built.	TOTAL TONNAGE. Tons & 95ths.
Oxford,			27			27	1,716 64
Vienna,	1		28			29	2,106 1
Annapolis,			1			1	52 10
Total,	9	9	126		5	152	18,462 93
DISTRICT OF COLUMBIA.							
Georgetown,				22		22	609 20
Total,				22		22	609 20
VIRGINIA.							
Norfolk,		2	9		2	13	1,702 05
Richmond,	1		1			2	426 43
Yorktown,				2	1	3	109 18
Tappahannock,			1			1	33 19
East River,			8			8	373 05
Accomack Court-house,			7			7	246 10
Yeocomico,			3			3	114 80
Cherrystone,			1			1	89 75
Total,	1	3	32	1	2	38	3,094 65
NORTH CAROLINA.							
Wilmington,	1		3	4		5	397 36
Newbern,			4			4	586 01
Washington,		1	2	1		4	287 64
Edenton,			2			2	87 09
Camden,			3	1		4	142 29
Beaufort,			5			5	236 40
Plymouth,			3			3	223 40
Ocracoke,			2			2	72 08
Total,	1	1	24	3		29	2,032 37
SOUTH CAROLINA.							
Charleston,			6		2	8	655 57
Total,			6		2	8	655 57
GEORGIA.							
Savannah,		1			1	2	756 37
Total,		1			1	2	756 37
FLORIDA.							
Key West,			1			1	119 88
Total,			1			1	118 88

DISTANCES.	CLASS OF VESSELS. Ships	Brigs	Schooners..	Sloops and canal b'ts.	Steamers ..	Total number of vessels built.	TOTAL TONNAGE. Tons & 95ths.
ALABAMA.							
Mobile,			2	1		3	106 54
Total,			2	1		3	106 54
LOUISIANA.							
New Orleans,		1	10	3	2	16	1,590 18
Teche,			2	1	2	5	165 30
Total,		1	12	4	4	21	1,755 48
TENNESSEE.							
Nashville,					2	2	242 79
Total,					2	2	242 78
KENTUCKY.							
Louisville,					34	34	8,423 33
Total,					34	34	8,423 33
MISSOURI.							
S. Louis,				8	11	19	2,886 51
Total,				8	11	19	2,886 51
ILLINOIS.							
Chicago,	1	3	9			13	2,210 84
Total,	1	3	9			13	2,210 84
OHIO.							
Cuyahoga,		1	4	5	4	14	2,252 67
Sandusky,		1	5	3	2	11	2,088 53
Cincinnati,					38	38	8,475 67
Total,		2	9	8	44	63	12,816 92
MICHIGAN.							
Detroit,			15	1	8	24	5,067 04
Michilimackinac				1		1	81 62
Total,			15	2	8	25	5,148 66

ALLEN A. HALL, *Register.*

TREASURY DEPARTMENT,
Register's Office, December 1, 1849.

Comparative view of the registered and enrolled tonnage of the United States, from 1815 *to* 1849, *inclusive.*

Years.	Registered tonnage	Enrolled and licensed tonnage.	Total tonnage.
1815	854,294 74	513,833 04	1,368,127 78
1816	800,759 63	571,458 85	1,372,218 53
1817	809,874 70	590,186 66	1,399,912 41
1818	606,088 64	619,095 51	1,225,184 20
1819	612,930 44	647,821 17	1,260,751 61
1820	619,047 53	671,118 64	1,280,166 34
1821	619,896 40	679,062 30	1,298,958 70
1822	728,150 41	696,548 71	1,324,699 17
1823	639,920 76	696,644 87	1,336,565 68
1824	669,972 60	719,190 37	1,389,163 02
1825	700,787 08	722,323 69	1,423,110 77
3826	737,978 15	796,210 68	1,534,189 83
1827	747,170 44	873,437 34	1,620,607 78
1828	811,619 34	928,772 52	1,741,391 87
1829	650,142 88	610,654 88	1,260,797 81
1830	576,675 33	615,311 10	1,191,776 43
1831	620,451 92	647,394 32	1,267,846 29
1832	686,989 77	751,460 39	1,439,450 21
1833	750,126 72	856,123 22	1,606,149 94
1834	857,438 42	901,468 67	1,758,907 14
1835	885,821 60	939,118 49	1,824,940 14
1836	897,774 51	984,328 14	1,882,102 65
1837	810,447 29	1,086,238 40	1,896,685 69
1838	822,591 86	1,173,047 89	1,995,639 80
1839	834,244 54	1,262,234 27	2,096,478 81
1840	899,764 76	1,280,999 35	2,180,764 16
1841	945,803 42	1,184,940 90	2,130,744 37
1842	975,358 74	1,117,031 90	2,092,390 69
1843	1,009,305 01	1,149,297 92	2,158,601 93
1844	1,068,764 91	1,211,330 11	2,280,095 07
1845	1,095,172 44	1,321,829 57	2,417,002 06
1846	1,131,286 49	1,431,798 32	2.562,984 81
1847	1,241,312 92	1,597,732 80	2,839,045 77
1848	1,360,886 85	1,793,155 00	3,154,041 85
1849	1,438,941 53	1,895,073 71	3,334,015 29

JOURNAL OF INTERNAL IMPROVEMENTS.

CANALS IN THE UNITED STATES.

Having met with an article that purports to be taken from the "Dry Goods Reporter," in which it is stated that there are 7,000 miles of canal in the United States, we deem it our duty to correct the error by furnishing our patrons with a list of the canals in the several States of the Union. The following list is taken from "Colton's United States Guide Book," published in 1850, and may be relied on, we think, as embracing all the canals now in use in this country.

It is difficult to appreciate the inducements that lead individuals to publish such egregious errors as we frequently find in the most respectable journals in the Union. We can scarcely admit that such errors originate in ignorance: for nothing appears more rational than to suppose that one whose philanthropy impelled him to labor for the enlightenment of others, would first of all, store his own mind with a correct knowledge of those subjects which he proposes to teach. And hence, we are sometimes led to suspect that the authors of these extraordinary productions have some individual interest to subserve, or favorite theory to sustain, and draw upon their imagination for the facts necessary to answer their purpose, trusting to escape detection through the ignorance and credulity of their readers. Indeed they incur but little hazard in publishing the most palpable errors: and, in general, exaggeration makes their facts the more attractive, and is calculated to insure their circulation in the public prints.

MAINE.

From Cumberland and from Portland to Sebago pond - - - - - -	20	1-2
From Sebago pond to Long pond, via Sango river improvement - - - -	30	
Total number of miles - - -	50	1-2

NEW HAMPSHIRE.

There are five short canals in N. H. Total length	12	6-

VERMONT.

There are 3 short canals in Vermont. Total length	1	1-4

MASSACHUSETTS.

Middlesex canal, from Charles river to the Merrimac	27	
Pawtucket canal, from Lowell to Chelmsford -	1	1-2
Blackstone canal, Worcester to Providence, (not in use,) [See Rhode Island,] - -	45	

Hampshire and Hamden canal - - -	22	
Montague Falls canal - - - -	3	
South Hadley canal - - - -	2	
Total number of miles - - -	100	1-2

RHODE ISLAND.

Blackstone canal, [this work is also placed among the works of Massachusetts,] from Providence to Worcester, (not in use,) - - -	45	

CONNECTICUT.

Enfield canal - - - - -	5	1-2
Farmington canal, from New Haven to Massachusetts line - - - - -	56	
Total - - - - -	61	1-2

NEW YORK.

Erie canal, from Albany to Buffalo - . -	364	
Champlain canal, connecting Erie canal with Lake Champlain - - - - -	73	
Chemung canal, connecting Mohawk and Susquehanna rivers, Utica to Binghamton - -	77	
Black river canal, from the falls on Black river, with the river improvement 77 1-2 miles, and a feeder from Boonville to Black river, 10 miles	87	1-2
Oneida Lake canal - - - -	8	
Oswego canal, from Syracuse to Oswego - -	38	
Cayuga and Seneca canal, from Montezuma to Geneva - - - - -	21	
Crooked Lake canal - - - -	8	
Genesee Valley canal, from Rochester to Olean -	52	
Chemung canal, from Knoxville to Seneca Lake -	33	
Feeder to Fairport - - - -	16	
Delaware and Hudson canal, from Eddyville, N. Y., to Rosendale, Pa., - - - -	108	
Total miles in New York - - -	905	1-2

NEW JERSEY.

Morris canal, from Jersey City, to Easton, Pa. -	102	
Delaware and Raritan canal, from New Brunswick to Bordentown 43 miles; feeder from Trenton to Saxtonsville, 23 miles - - -	66	
Total miles in New Jersey - - -	168	

PENNSYLVANIA.

Pennsylvania canal, main division to Hollidaysburg	172
Western division to Pittsburgh - - -	104
Susquehanna division to Northumberland -	40
North Branch division, from Northumberland to Wyalusing, in the anthracite coal region -	124
West Branch division, from Northumberland to Farrandville - - - -	75
Delaware division, from Bristol to Easton -	60
Beaver and Erie canal, from Beaver to Erie -	136
French Creek feeder - - - -	45
Schuylkill Navigation canal, from Fairmount to Port Carbon - - - - -	108
Lehigh Navigation Company, from Easton to Stoddardsville - - - - -	84
Union canal, from Reading to Middletown -	82
Susquehanna or Tidewater canal, from Wrightsville to Havre de Grace, Md. - -	45
Total miles in Pennsylvania - -	1075

DELAWARE.

Chesapeake and Delaware canal - - -	14

MARYLAND.

Chesapeake and Ohio canal, from Alexandria to Cumberland - - - - -	191

VIRGINIA.

James River canal, from Richmond to Lynchburg	146
Dismal Swamp canal - - - -	23
Total miles in Virginia - - -	169

NORTH CAROLINA.

Weldon canal, from Weldon to Blakely - -	12
Clubfoot and Harlan canal - - -	1 1-2
Total in North Carolina - - -	13 1-2

SOUTH CAROLINA.

Santee canal, - - - - -	22
Wenyaw canal, - - - -	7 1-2
Catawba canals (five in number), - -	11 1-2
Total miles in South Carolina, - - -	41

GEORGIA.

Savannah and Ogeechee canal, - - -	16
Brunswick canal, - - - -	12
Total in Georgia - - - -	28

ALABAMA.

Muscle Shoals canal, - - - -	35 1-2
Huntsville canal, - - - - -	16
Both these canals in Alabama have been abandoned.	
Total miles, - - - - -	51 1-2

LOUISIANA.

Orleans Bank Canal, from New Orleans to Lake Pontchartrain - - - -	4 1-2
Barataria canal, from opposite New Orleans to Lake Terre Bonne, - - -	26
Lake Veret canal, - - - -	8
Total miles in Louisiana, - -	38 1-2

KENTUCKY.

Louisville and Portland canal, - - -	2 1-2

OHIO.

Ohio canal, from Portsmouth to Cleveland, -	309
Walhonding canal, connects with the Ohio canal at Roseoe, - - - -	25
Hocking canal, connects with the Ohio Canal at Carroll, - - - - -	56
Miami Canal from Cincinnati to junction on the Wabash and Erie Canal - - - -	181
Warren county canal, - - - -	19
Sidney Feeder, - - - - -	13
St. Mary's Feeder, - - - -	11
Muskingum Improvement, - - -	91
Sandy and Beaver canal, - - -	81
Wabash and Erie canal, Ohio division, - -	88
Total miles in Ohio, - - -	874

INDIANA.

Wabash and Erie Canal, Indiana division, (in use)	271*
White Water canal, from Lawrenceburg to Cambridge, - - - - -	68
Total in Indiana, - - - -	339

ILLINOIS.

Illinois and Michigan canal, from Peru to Chicago,	100

Total number of miles of Canal in use in the United States in 1850 - - - - - 4136.35.

* When completed, the total length of the Wabash and Erie Canal will be four hundred and sixty-seven miles.

WABASH CANAL.

We have taken some pains to ascertain the progress now being made in the construction of the Evansville division of the Wabash and Erie canal. We had the pleasure, about the first of June, of announcing that an important division of forty-two miles, between Terre Haute and Point Commerce, had been completed and the water let into it. We have now a continuous canal—the whole line in fine navigable order—from Toledo to Point Commerce, Indiana, a distance of three hundred and fifty-two miles. Point Commerce is one hundred and ten miles from Evansville on the Ohio river, the southern terminus of the Wabash and Erie canal—the longest canal in the United States. The southern division, from Point Commerce to Evansville, a distance of one hundred and ten miles, is in rapid process of construction.

A division of seventeen miles, extending to Newbury, will be opened by the first of November next.

Another division of twenty-three and a half miles, extending to Maysville, on the road leading from Louisville to Vincennes, will be opened by the fall of 1850.

While the canal was owned by the State of Indiana, nineteen miles of it next to Evansville was finished. Some three or four years since, we traveled on the tow-path some distance, and recollect that it then appeared in a good state of repair. The portion unfinished (though considerable work has been expended upon it) lies between that division and Maysville. We learn from the Chief Engineer, Jesse L. Williams, Esq., now having charge of the work—finished as well as unfinished portions of the canal—that he intends to pass loaded boats through the whole line from Toledo to Evansville, *within two years from this date.* [*Toledo Republican.*

JOURNAL OF MINING AND MINES.

LEAD MINES IN SOUTH-WEST MISSOURI.

The following communication from our highly valuable correspondent, William S. Moseley, Esq., will be read with much pleasure by all who desire to see the mineral wealth of our State developed. It is remarkable how little the people of Missouri know of the resources of their own State, or of the pursuits of those residing out of their immediate neighborhoods. We have made many inquiries in regard to what was doing at the lead mines in the south-west, but the following

of coal in the town of Taychedah, on "the Ledge." It says:

"The coal on applying a match catches readily, and burns freely. This coal was discovered in the crevice of the Limestone; and Mr. M. feels confident that further investigations will exhibit it in greater quantities---at least persons familiar in coal regions, state that the geological formation of the immediate vicinity is favorable. We hope that such may be the case. It would be an acquisition to our mineral wealth hitherto unlooked for."

NAVIGATING ST. PETERS' RIVER.

The steamer Anthony Wayne performed this feat on the 28th ult,---ascending the stream 60 miles from its mouth, with apparent ease. We learn from the Minnesota Pioneer, that the scenery along this river is beautiful beyond description---the country itself charming as a paradise. Several Indian villages were passed, and a few visited, during the excursion.

The company on board, some three hundred in number, were highly gratified at the excursion; but, from some unaccountable reason, they were put on short allowance of victuals.

The steamer Lamartine promises to perform the same feat on her next trip, not forgetting the needful in the way of eatables.---*Dubuque Express.*

LINE OF MAIL STAGES TO SANTA FE.

We are gratified that the Post Office Department has at length established this line upon a footing that promises to be successful in the end; though we have heard that the stages on the first trip encountered a good deal of difficulty on account of the failure of their teams.

The Missouri Commonwealth, published at Independence, gives the following account of the departure and equipment of the first mail stage from that place westward. The first train left, we believe, on the 1st of July last.

SANTA FE LINE OF MAIL STAGES.

We briefly alluded, some days since, to the Santa Fe line of mail stages, which left this city on its first monthly trip on the first instant. It was our intention at that time to have noticed this matter as its novelty and importance demanded, but want of leisure prevented. This is an important extension of mail service, and will be of untold utility, both to New Mexico and

the States. But we simply took up our pen to give our friends in other parts of the country, some idea of the *preparations* which have been made by the contractors, Messrs. Waldo, Hall & Co., to convey the mail safely through the Indian country—an undertaking which must seem hazardous, after the many murders that have been perpetrated recently by hostile tribes. The stages are got up in splendid style, and are each capable of conveying eight passengers. The bodies are beautifully painted, and made water-tight, with a view of using them as boats in ferrying streams. The team consists of six mules to each coach. The mail is guarded by eight men, armed as follows: Each man has at his side, strapped up in the stage, one of Colt's revolving rifles; in a holster, below, one of Colt's long revolving pistols, and in his belt a small Colt revolver, besides a hunting knife; so that these eight men are prepared, in case of attack, to discharge *one hundred and thirty-six* shots without stopping to load! This is equal to a small army, armed as in olden times, and from the courageous appearance of this escort, prepared as they are, either for offensive or defensive warfare with the savages, we have no apprehensions for the safety of the mails. The whole of the equipment for this expedition is of our own city manufacture, except the revolvers.

The enterprising contractors have establishhd a sort of depot at Council Grove, a distance of 150 miles from this city, and have sent out a blacksmith, a number of men to cut and cure hay, with a quantity of animals, grain and provisions; and we understand they intend to make a sort of traveling post there, and to open a farm. They contemplate, we believe, to make a similar settlement at Walnut Creek next season.

Two of their stages will start from here the first of every month. The contractors are amongst our most responsible and wealthy citizens, and the firm is composed, as we understand, of Dr. David Waldo, Jacob Hall, Esq., and William McCoy, late Mayor of our city.—*Missouri Commonwealth.*

NAVIGATION OF THE UPPER MISSOURI.

We extract from an exchange paper the following account of the voyage of the steamer El Paso to the mouth of Milk river, a tributary of the Missouri; but if the maps are to be relied on, Milk river is much less than 300 miles from the mouth of the Yellow Stone:

Extraordinary Voyage—From Milk River.—Probably few readers know the whereabouts of Milk river. It is "right away in the Indian country," three hundred and fifty miles, more or less, above the mouth of the Yellow Stone river; yet, there has steam penetrated; the steamer El Paso, of St. Louis,

having been eight miles up the stream, conveying men and goods to the forts among the Indians. She made the trip there and back in fifty-six days.

The El Paso left St. Louis on her upward trip to the head-waters of the Missouri, at 12 M., May 6th, 1850.

On the 11th of June a considerable quantity of floating ice was met in the river. We experienced much difficulty in getting over the sand-bars, and on the day following landed at Fort Clark, where we took on board a quantity of corn.

A Mackinaw boat, in tow of the El Paso, was sunk on June the 18th, at Elk Horn, Pyramid Prairie. Mr. Honore Picot, for many years commander or superintendent at Fort Pierre, here went ashore with a number of his men, and collected a a large quantity of elk horns, which have been brought down by the El Paso. At 2 o'clock, P. M., of the same day, we passed the point where the steamer Assineboin had wintered some years ago—the highest point ever before or since attained by steamboats. The Assineboin, it is remembered, was frozen, and before the end of winter entirely broken up.

On the 20th June we got eight miles above the mouth of the Milk river, being about three hundred and fifty miles above the mouth of the Yellow-Stone. Our freight and the traders were all landed here. A board bearing the following inscription, was fixed on a tree by the passengers: "The steamer El Paso landed at this point on the 20th June, 1850—thirty-five days from St. Louis; John Durack, Captain." We commenced our downward trip the same day. In the latter days of the journey, we saw on either shore large bands of buffaloes, deer, and elk, and succeeded in killing many at different times.

PHYSICS OF THE MISSISSIPPI RIVER.

We are indebted to Professor FORSHEY for a copy of his "Memoir of the Physics of the Mississippi River"—a document containing much interesting matter. We shall give it a place in the next number of the Western Journal.

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Saint Louis Furniture Store,

WM. M. HARLOW, proprietor. Manufactures and keeps constantly on hand every variety of household furniture, matresses, window blinds, willow ware, &c., &c.

Also, manufactures to order every article in his line, with despatch. Orders from abroad promp ly attended to, and goods carefully packed. All goods warranted, as recommended.

New Warehouse, No. 88 Second street, between Olive and Locust streets, St. Louis, Mo.

Clothing at Wholesale.

ARCHIBALD YOUNG & CO., 99 Main street, St. Louis, Mo. Wanzer Minor & Co , 126 Pearl street, New York, Moses Wanzer and Henry J. Minor, New York, Archibald Young St. Louis.

N B —We manufacture all of our own goods, and sell at the lowest possible prices.

ROLLIN CLARK, JOHN RENFREW, } PHILANDER BRALEY, ALEXANDER CROSIER.

Eagle Foundry and Engine Shop.

NORTH west corner of Main and Biddle streets. Manufacturers of all kinds of machinery, boilers and sheet iron work, por able circular saw mills always on hand, all orders executed wi h fidelity and despatch.

A splendid fortune may be gained by an outlay of £10 or £5.

Metropolitan Portrait Club.

Offices—88, Albany road, London, England.

THE Directors beg to announce that there will be drawn for a grand series of por'rai's of all horses entered for the forthcoming Great Derby Race.

The drawing will be conducted upon those honorable principles which have hitherto given so great satisfaction, and secured to the above association such extenstve patronage; and that while the past success and high estimation in which the club is held are s bjects of pleasing congratulation to the projectors, they encourage endeavors for a still further development of their plan. For the future, therefore, the number of pr zes will be extended to the portraits of all horses that are entered for each particular race —Non-starters as well as winners and starters. The following list is now open:

5,000 members to each class. First class £10, second do. £5, third do. £1.

Parties can have one or more shares in each or either of the different classes. hose members who draw the portraits of first, second, and third horses, the other starting horses, also those that do not start (but which are entered for the race), will receive the following prizes. The drawing will take place ten days before the races.

	Portrait of first horse.	Do. Second do.	Do. Third do.	Divi'ed am'gst the portraits of Starters.	Do. Do. non starters
First class	£20 000	£10,000	£5,000	£5,000	£10 000
Second do.	10,000	5,000	2,500	2,500	5,000
Third do.	2,000	1,000	500	500	1,000

The number of pr zes to be distributed in each class are 209, that being the number of horses entered for the race. All letters to contain a remittance drafts, bank-notes, &c., addressed and made payable to the managing director.

JOHN BURRIDGE, Esq . 88, Albany Road, London, England.

Numbers forwarded immediately on receipt of a remittance. Full particulars of the race will be sent with the fortunate numbers to each subscriber, so that he may know his position and whether or not he be one of the fortunate. Office commission 7 1-2 per cent., to be deducted from the above prizes.

N. B.—Lists open for theSt. Leger same as the above.

UDSON E. BRIDGE. HARRISON P. BRIDGE.

BRIDGE & BROTHER,

No. 158 Main Street, St. Louis, Mo.,

MANUFACTURERS of Pierce's Patent "American Air-Tight," "Empire" and "Victory" Premium Cooking Stoves, and every variety of Wood and Coal heating Stoves, dealers in Tin Plate, Copper, Sheet Iron, Iron Wire, Tinners' Tools, Machines, also, manufacturers of Jewett's Improved Patent Cary Ploughs.

J. BAPTISTE,

MATHEMATICAL and Surgical Instrument maker. Dealer in Guns, Pistols and Sporting Materials. No 68 North Second Street, between Pine and Olive, St. Louis, Mo., Manufactures and has always on hand; Surveyors Compasses and Chains, Levelling Instruments, Theodolite Pocket Compasses, Spy-glasses, Barometers, Thermometers, Drawing Instruments, Spectacles, Ivory and Gunter's Scales and Protractors, Hour and Half Hour Glasses, Microscopes and Magnifying Glasses, Hydrometers of silver and glass, Hydrometers for acids and salts, Magic Lanthorns, Electrical Machines, &c., also-- Surgical and Dental Instruments; Pocket, Dissecting, Cupping and Self-injecting Cases; Taylor's Shears, all sizes, Syringes, large and small, Scarificators, Lancets; Forceps; Turnkeys; Large Scales and Weights, for Druggists; Prescription Scales on Stands; Revolvers, Guns, Pistols, Powder Flasks, Game Bags, &c., ☞ All the above Instruments repaired at short notice in the best manner.

CHARLES T. WILGUS. JOHN S. WATSON.

WILGUS & WATSON,

HOUSE, Sign, Steamboat & Ornamental Painters, Glaziers, Paper Hangers, Whiteners and Wall Colorers, No. 52 and 54 Pine Street, Saint Louis. Also, Dealers in American and French Paper Hangings, in great variety and of superior quality; White Lead, Oil, Turpentine, Varnishes, Window Glass, Putty, and every variety of Paints, wholesale and retail.

WILSON & BROTHERS,

WHOLESALE DEALERS IN HARDWARE, corner of Main and Olive streets, St. Louis, Mo.

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DAVID PEARCE, & CO.,

MANUFACTURERS and wholesale dealers in Hats, Caps and Straw Goods, No. 120 Main street, St. Louis, Mo.

HEWITT & STEINACKER,

SADDLE, Harness and Trunk Manufacturers, wholesale and retail, No. 67 Fourth street, corner of Pine, opposite the Planters House, St. Louis, Mo.

M. B. COX. WM. M. SIMPSON. GEO. BURNET, Jr

M. B. COX & CO.,

WHOLESALE dealers in Boots and Shoes, Shoe Findings, Hats, Caps and Bonnets, Artificial Flowers, Umbrellas and Parasols, Pongee and other Silk Handkerchiefs, Hosiery and Gloves, Trimmings, Small Wares, and Variety Goods, No. 91 Main street, east side, between Locust and Olive, St. Louis, Mo.

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SCALE AND SPUR Factory, Brass Foundry and Machine Shop, 202 north Second street, between Morgan and Cherry sts., St. Louis, Mo. Constantly on hand and manufactured to order, Platform Scales of all sizes, Counter and Druggist Scales, Flour, Floor, Hay and Car Scales. Also, Beam Scales, of Iron or Brass. Scales repaired with neatness and despatch. Spurs, for Dragoons and others, and Brass Castings furnished on short notice.

P. WONDERLY,

MANUFACTURER of Copper, Tin and Sheet Iron Work—such as Copper Pipes for Steamboats and Distilleries, Soda Fountains, Copper Kettles, Well and Cistern Pumps, and every other article in his line of business; No. 233 Main street, south east corner of Cherry, St. Louis, Mo He also manufactures and keeps constantly on hand, Premium Steamboat Cooking Stoves. Tinware always on hand, wholesale and retail.

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JAS. A. WRIGHT.

John Mullery,

PREMIUM Horse Shoer, in the alley, opposite the Post Office, will as usual pay particular attention to he various diseases aff cting the fect of horses, and will guarantee to give general sa isfaction in ei her of the above departments.

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For sale by JOHN SIGERSON & BROTHERS, at their fruit farm and nursery. This establishment is located seven miles South of St. Louis, Mo. There are Omnibus Coaches running daily from the City within one half mile of the establishment The Nursery and Gardens are open at all times (Sundays excepted) for the recep ion of visitors. Horticulturists and Amateurs are respectfully invited to visit the establishment and examine for themselves. In directing the attention of the public to their nursery, they would remark that one of the firm, (Mr. James Sigerson,) has been engaged in the above business for the last twenty five years; during that time he has tested many of the varieties now growing. This, with the assurance on their part of an intention to increase the number of their trees, as well as to add to heir assortment from year to year, furnishes a strong guarantee to persons wishing to make choice selections of fruit, that they can always be supplied. The r prices for trees will be as reasonable as at any similar establishment East or Wes , and when desired, trees will be delivered free of charge in the city or on steamboats; packed in good order for their des ination.

☞All letters addressed to John Sigerson, St. Louis, or to James Sigerson, Carondolet, will meet with prompt attention.

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MANUFACTURERS OF FIRE PROOF VAULTS, Safes, Iron Window Shutters and Doors, cast and wrought iron Railings, and all kinds of ornamental iron work. Also, heaters for public and private buildings.

In the manufacture of Iron Railing, either wrought or cast, over five hundred designs in their possession may be examined, embracing all the most beautiful patterns of the eastern countries, public and private buildings.

Every article in their line, made with despatch; and warranted equal to any manufactured in the United States. No 41 Third street, St. Louis, Mo.

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WHOLESALE dealers in Dry Goods, No. 71 Main street, St. Louis, Mo. Wayman Crow, Phoceon R. McCreery, Wm. H. Barksdale, Wm. A. Hargudine, Chas. D Appleton.

Woods, Christy & Co.,

WHOLESALE dealers in Dry Goods, No. 75 Main street, St. Louis, Mo James Woods, William T Christy, James C. Christy, Robert K. Woods.

Protect Your Property.

HAVING made an important improvement in the application of Blake's Slate Paint, for which I am obtaining Letters Patent, I am prepared to do any amount of work, in the roofing line, or to furnish any person with the slate, in sheets or rolls, containing from 2 to 600 feet in a roll; and any person can lay it over his roof himself. Farmers and merchants can have their warehouses, barns and dwellings rendered perfectly fire proof by this means. I charge $5 50 per square of 100 feet In building, nearly one fourth of the entire cost may be saved by having the roofs flat. The gable walls and steep roof being dispensed with if thought best; thus making the cost of a roof of my slate less than even shingles; and one half less than Welsh slate, or iron. I can do work for persons out of the city if desirable, provided the distance is not too great from the rivers. Persons wishing to embark in the roofing business, can buy the right to any territory they wish, at low rates; and are sure to make money if they are industrious. I am prepared to fill all orders that may present for doors, sash, blinds, flooring, &c., at lower rates than any one in the west. No order will be filled without the cash. Any particular form of sash or doors made to order Manufacturers, as usual, supplied with any kind of machinery. Patents secured. Engraving done.

Blake's slate paint always on hand, in any quantity. Letters, post paid will be attended to. No. 65 Locust street, St. Louis, Mo.

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Washington Foundry.

CORNER of Second and Morgan streets, St Louis, Mo. We are prepared to fill with dispatch, and to fit up in superior style, all orders in the Foundry and Machine business, such as steam engines, mill work, mill castings, railroad cars, wheels for coal trucks, lard and soap kettles of all sizes, press screws, &c., made to order at short notice Wool carding machines, shearing machines, and a large and superior stock of machine cards, which we warrant equal to any in the Union.

All orders from the country will meet with prompt attention

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THE undersigned takes the liberty of informing you that he has removed his place of business to Olive street, a few doors above Main, south side, in the Exchange Building, and three doors above Messrs. E. W. Clarke & Co.'s Banking House, where he is now opening, and will continue to receive during the Spring months, a large and full assortment of the most

Fashionable Styles of Goods,

In his line, for gentlemen's wear; and where he will be pleased to see his old friends and customers, and their friends with them; and assures those who may favor him with their patronage, that they shall receive his personal attention, and his best efforts to please. Very respectfully, your ob't servant,

J. G. SHELTON.

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MANUFACTURER of the celebrated prize premium cooking stoves; also, Irving's air tight cooking stoves, fancy parlor stoves, fancy box and coal stoves; dealer in tin plate, copper, sheet iron, block tin, rivets, tinner's tools, machines, &c. Warehouse No. 163 north Main street, St. Louis, Mo. Foundry on Lewis street, near the water works.

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Missouri State Mutual Insurance Company.

DIRECTORS:—John O'Fallon, C. M. Valleau, Reuben Knox, Daniel D. Page. Oliver Bennett, John Sigerson, John S. McCune, Joseph A. Eddy, True W. Hoit.

This company is established upon the mutual principles of insurance, and is emphatically a home institution. The fire risks of this company are extended into all parts of this State. Its earnings are never employed or invested in stocks or real estate, but kept for the prompt liquidation of losses, and under the immediate control of the Directors Every person insuring with this company becomes interested in its success, and its profits instead of being divided among a few stockholders, belong to those who insure in this company.

The Directors aware of the importance of a well secured fund, reliable in case of loss, and a mpleun der all ordinary calamity, assure the public that they have already apledged fund ample and reliable for any contingency, with a monthly increase of premiums t over ten thousand dollars. For the length of time this company has been in operation (six months) its business has been extended into all parts of the State and the city, and has received from the public a liberal patronage, which has placed it upon a permanent basis.

By an act incorporating this company, the parties insuring property therein, are entitled to the entire profits of the institution, the premium notes are also pledged by the charter for the payment of losses.

The portfolio of the company is at all times open to the inspection of its members and those wishing to make insurance with it. Policies are issued from thirty days to six years, thereby effecting a permanent insurance, with a return premium of from fifteen to fifty per cent, according to the term of insurance.

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Office of the company over E W. Clark & Bro., corner Main and Olive streets, Exchange building, where insurance will be effected at the tariff rates of premium.

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H. D. BACON, Treasurer.

S. F. LEDYARD, Secretary.

Home Mutual Fire and Marine Insurance Company of St. Louis.

NOTWITHSTANDING the heavy loss sustained by this company in May last the stock notes now on hand amount to $350,000. The stock notes of the company are secured by lien upon real estate and approved endorsers. Office, No. 120 North Third street.

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IRON RAILING MANUFACTORY corner of Third and Pine Streets, continue to manufacture at the above establishment, all kinds of Plain and Ornamental Iron Railing, Balconies, Bank and Jail Doors, Book Safes, Fire-Vaults, Iron Window Shutters, Iron Awnings, Lightning Rods, Bedsteads, Gratings, and in fact, any thing which can be formed of Iron.

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MANUFACTURERS of Copper, Tin and Sheet Iron Ware, Lead Pipe, Sheet Lead, Bells weighing from 20 to 400 pounds, Brass Castings, Beer and Soda pumps, and general Stove Dealers.

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